

IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF DELEWARE

KENEXA BRASSRING, INC.,

Plaintiff

v.

TALEO CORPORATION,

Defendant.

C. A. No.: 07-521-SLR

**KENEXA BRASSRING'S REPLY TO DEFENDANT'S COUNTERCLAIMS**

Plaintiff, Kenexa BrassRing, Inc. ("Kenexa"), by its counsel, hereby responds to the numbered paragraphs of the Counterclaims of the Defendant, Taleo Corporation ("Taleo"), filed on January 28, 2008.

**Jurisdiction and Venue**

1. Kenexa admits the allegations of paragraph 1 of the Counterclaims to the extent that Kenexa filed its Complaint against Taleo asserting claims of infringement of United States Patent No. 5,999,939 ("the '939 patent") and United States Patent No. 6,996,561 ("the '561 patent") and that declaratory judgment jurisdiction exists for Taleo's Counterclaims that arise from the same events alleged in Kenexa's Complaint. Otherwise, denied.

2. Kenexa admits that this Court has subject matter jurisdiction for Counterclaims that arise from the same events alleged in Kenexa's Complaint. Kenexa further admits that this Court has personal jurisdiction for Counterclaims that arise from the same events alleged in Kenexa's Complaint. Kenexa denies the allegation that "Kenexa voluntarily appeared before this Court for all purposes."

**The Parties**

- 3. Admitted.
- 4. Admitted.
- 5. Admitted.
- 6. Denied.

**FIRST COUNTERCLAIM**

**Declaratory Judgment of Non-Infringement of the '939 Patent**

7. Kenexa incorporates, by reference, its admissions and denials of the allegations of paragraphs 1 – 6, as set forth above.

- 8. Denied.
- 9. Denied.

**SECOND COUNTERCLAIM**

**Declaratory Judgment of Non-Infringement of the '561 Patent**

10. Kenexa incorporates, by reference, its admissions and denials of the allegations of paragraphs 1 – 6, as set forth above.

- 11. Denied.
- 12. Denied.

**THIRD COUNTERCLAIM**

**Declaratory Judgment of Invalidity of the '939 Patent**

13. Kenexa incorporates, by reference, its admissions and denials of the allegations of paragraphs 1 – 6, as set forth above.

- 14. Denied.
- 15. Denied.

**FOURTH COUNTERCLAIM**

**Declaratory Judgment of Invalidity of the '561 Patent**

16. Kenexa incorporates, by reference, its admissions and denials of the allegations of paragraphs 1 – 6, as set forth above.

17. Denied.

18. Denied.

**FIFTH COUNTERCLAIM**

**Declaratory Judgment of Unenforceability of the '939 Patent**

19. Kenexa incorporates, by reference, its admissions and denials of the allegations of paragraphs 1 – 6, as set forth above.

20. Kenexa admits that BrassRing, Inc. filed a Declaratory Judgment Complaint (“Complaint”) in the United States District Court for the District of Massachusetts, on July 31, 2000. Otherwise, denied.

21. Denied.

22. Denied.

23. Kenexa admits the allegations of paragraph 23 to the extent that BrassRing, Inc. filed a Request for Ex Parte Reexamination of the '939 patent. Otherwise, denied.

24. Denied.

25. Denied. (See Exhibit A, the United States Patent and Trademark Office File History for the Reexamination of the '939 patent, especially the “Response Under 37 CFR §1.111” dated Nov. 3, 2003, and the copy of the “Complaint” dated July 31, 2000, in the matter of BrassRing, Inc. v. Interactive Search, Inc., 00-cv-11525 (D. Mass.)

attached thereto.)

26. Denied. (See Exhibit A, the United States Patent and Trademark Office File History for the Reexamination of the '939 patent, especially the "Response Under 37 CFR §1.111" dated Nov. 3, 2003, and the copy of the "Complaint" dated July 31, 2000, in the matter of BrassRing, Inc. v. Interactive Search, Inc., 00-cv-11525 (D. Mass.) attached thereto.)

27. Denied.

28. Denied.

29. Denied.

#### **SIXTH COUNTERCLAIM**

##### **Declaratory Judgment of Unenforceability of the '561 Patent**

30. Kenexa incorporates, by reference, its admissions and denials of the allegations of paragraphs 1 –6 and 19-29, as set forth above.

31. Admitted.

32. Denied.

33. Denied.

34. Denied.

35. Denied.

36. Denied.

37. Denied.

**Exceptional Case**

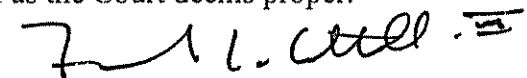
38. Denied.

WHEREFORE, Kenexa requests that the Counterclaims be dismissed with prejudice, that the matter be declared an exceptional case and that it be awarded its attorneys' fees and costs and such other relief as the Court deems proper.

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Dated: February 19, 2008



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*Attorneys for Plaintiff*

*Kenexa Brassring, Inc.*

**IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF DELAWARE**

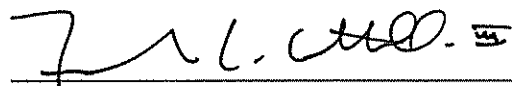
**CERTIFICATE OF SERVICE**

I hereby certify that on February 19, 2008, I caused to be served by hand delivery the foregoing document and electronically filed the same with the Clerk of Court using CM/ECF which will send notification of such filing(s) to the following:

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Morris, Nichols, Arsht & Tunnell  
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Wilmington, DE 19899

I hereby certify that on February 19, 2008, the foregoing document was sent via Federal Express to the following non-registered participants:

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# **EXHIBIT A**





## REEXAMINATION

66648 U.S. PTO  
90/006570  
03/24/03

## PATENT APPLICATION



90006570

## CONTENTS

Entered

When Entering a Paper See  
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1.	REQUEST PAPERS FILED	
2.	Title Report	03/25/03
3.	Not. of Reexam. Req. Fil. Dt.	04/09/03
4.	" " Assigned Grp.	04/09/03
5.	Order Granting Request of Reexamination	5-12-03
6.	Rejection (ssp 2 mos.)	09-02-03
7.	Letter Response	11-6-03
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	Date	Ex'r

**FOR O.G.**

**DRAWING FIG.**  
**FOR CERTIFICATE AND**  
**FOR O.G. \_\_\_\_\_**



{date}

**DIRECTOR  
INITIALS**

Class	Sub	Date	Ex'r

Claim		Date						Claim		Date					
Final	Original							Final	Original						
	1								26						
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☐ Rejected  
☐ Patentable  
☐ Canceled  
☐ Appeal  
☐ Objected



US00599939C1

(12) **EX PARTE REEXAMINATION CERTIFICATE (5000th)**  
**United States Patent**  
 de Hilster et al. (10) Number: **US 5,999,939 C1**  
 (45) Certificate Issued: **Oct. 19, 2004**

(54) **SYSTEM AND METHOD FOR DISPLAYING AND ENTERING INTERACTIVELY MODIFIED STREAM DATA INTO A STRUCTURED FORM**

5,832,497 A 11/1998 Taylor 707/104  
 5,999,939 A 12/1999 de Hilster 707/102  
 6,246,996 B1 6/2001 Stein et al. 703/26

**FOREIGN PATENT DOCUMENTS**

WO WO 95/24687 A1 9/1995

**OTHER PUBLICATIONS**

Noah, William W and Rollin V. Weeks, "TRW, Description of the Defl System as Used for MUC-5," pp. 237-248, 1993

\* cited by examiner

(75) Inventors: David Scott de Hilster, Long Beach, CA (US); Alan George Porter, Huntington Beach, CA (US); John Reese, Los Angeles, CA (US)

(73) Assignee: Brassring LLC, Waltham, MA (US)

Reexamination Request:  
 No. 90/006,570, Mar. 24, 2003

Reexamination Certificate for:  
 Patent No.: 5,999,939  
 Issued: Dec. 7, 1999  
 Appl. No. 09/019,948  
 Filed: Feb. 6, 1998

**Related U.S. Application Data**

(60) Provisional application No. 60/068,404, filed on Dec. 21, 1997

(51) Int. Cl. G06F 17/00; G06F 17/30

(52) U.S. Cl. 707/102; 707/104.1; 707/10

(58) Field of Search 707/102, 104.1, 707/10; 715/523, 505

**References Cited**

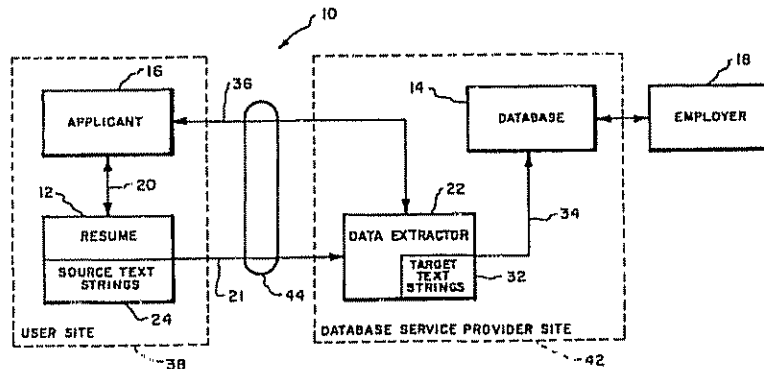
**U.S. PATENT DOCUMENTS**

5,164,899 A 11/1992 Sobotka et al. 364/419

Primary Examiner—Uyen Le

**(57) ABSTRACT**

A system and method for facilitating the accurate entry of information into a highly structured database by initially extracting information from a plurality of nonuniformly formatted source data streams, e.g., documents/files, and subsequent interactions with users before storing the accepted and/or modified information into the database. Embodiments of the present invention provide an interactive path for each user (e.g., the author of the source document/file) to interactively modify the extracted data, e.g., according to the source document/file. Preferably, this interactive path is provided via the Internet and the extracted information can be modified by editing and/or selectively copying portions of the source documents/files to supplement and/or modify the extracted information.



US 5,999,939 C1

<sup>1</sup>  
**EX PARTE**  
**REEXAMINATION CERTIFICATE**  
**ISSUED UNDER 35 U.S.C. 307**

NO AMENDMENTS HAVE BEEN MADE TO  
THE PATENT

<sup>2</sup>  
AS A RESULT OF REEXAMINATION, IT HAS BEEN  
DETERMINED THAT:

<sup>3</sup> The patentability of claims 1-20 is confirmed.

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Page 1 of 1


 Commissioner for Patents  
 Washington, DC 20231  
 www.uspto.gov

CONFIRMATION NO. 1696

Bib Data Sheet

<b>SERIAL NUMBER</b> 90/006.570	<b>FILING DATE</b> 03/24/2003 <b>RULE</b>	<b>CLASS</b> 707	<b>GROUP ART UNIT</b> 2171	<b>ATTORNEY DOCKET NO.</b> H00644 70004 US
<b>APPLICANTS</b> 5999939, Residence Not Provided; BrassRing Systems(Owner), San Mateo, CA; Patent Owner, Residence Not Provided;				
<b>** CONTINUING DATA *****</b> This application is a REX of 09/019,948 02/06/1998 PAT 5,999,939 which claims benefit of 60/066,404 12/21/1997				
<b>** FOREIGN APPLICATIONS *****</b>				
Foreign Priority claimed <input type="checkbox"/> yes <input type="checkbox"/> no 35 USC 119 (a-d) conditions <input type="checkbox"/> yes <input type="checkbox"/> no <input type="checkbox"/> Met after met Allowance		<b>STATE OR COUNTRY</b>	<b>SHEETS DRAWING</b>	<b>TOTAL CLAIMS</b> 20  <b>INDEPENDENT CLAIMS</b> 3
Verified and Acknowledged Examiner's Signature _____ Initials _____				
<b>ADDRESS</b> 23628				
<b>TITLE</b> SYSTEM AND METHOD FOR DISPLAYING AND ENTERING INTERACTIVELY MODIFIED STREAM DATA INTO A STRUCTURED FORM				
<b>FILING FEE RECEIVED</b> 2520	FEES: Authority has been given in Paper No _____ to charge/credit DEPOSIT ACCOUNT No _____ for following:		<input type="checkbox"/> All Fees <input type="checkbox"/> 1.16 Fees ( Filing ) <input type="checkbox"/> 1.17 Fees ( Processing Ext. of time ) <input type="checkbox"/> 1.18 Fees ( Issue ) <input type="checkbox"/> Other _____ <input type="checkbox"/> Credit	

H00644/70004 (MBL)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent of: de Hilster et al.  
Patent No.: 5,999,939  
Issued: December 7, 1999  
Serial No: 09/019,948  
Filed: February 6, 1998  
For: System And Method For Displaying And Entering Interactively Modified Stream Data Into A Structured Form

Reexam Control No :  
Reexam Filed: Herewith

*(Circular stamp: RECEIVED MAR 24 2003)*

CERTIFICATE OF MAILING UNDER 37 C.F.R. §1.8(a)

The undersigned hereby certifies that this document is being placed in the United States mail with first-class postage attached, addressed to Box Reexam, Commissioner for Patents, Washington, D.C. 20231, on March 20, 2003.

*(Signature: J. de Hilster)*  
Signature

Box Reexam  
Commissioner for Patents  
Washington, D.C. 20231

REQUESTER'S/PATENT OWNER'S DETAILED REQUEST FOR EX PARTE  
REEXAMINATION PURSUANT TO 37 C.F.R. §1.510(b)

Sir:

Reexamination of U. S. Patent No. 5,999,939, which issued on December 7, 1999 to David de Hilster et al. ("the '939 patent"), is requested by the Patent Owner under 35 U.S.C. §§302-307 and 37 C.F.R. §1.501. The '939 patent is still enforceable. A copy of the patent in accordance with 37 C.F.R. §1.510(b)(4) is submitted herewith.

I. Introduction

Requester seeks a determination that U.S. Patent No. 5,164,899 et al. ("the '899 patent"), U.S. Patent No. 5,832,497 ("the '497 patent"), PCT Publication 95/24687 ("the PCT publication"), and the article entitled "TRW: Description of the DEFT System as Used for MUC-5" by Noah and Weeks ("the Noah publication") do not adversely affect the patentability of any claim of the '939 patent.

Requester invites the Office to deny the reexamination request or, instead, to issue an order finding a substantial new question of patentability but only because the above-cited

631183.1

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references were not of record during the prosecution of the '939 patent, and then to issue an action confirming the patentability of all claims of the '939 patent over the above-cited references.

## II. Claims for Which Reexamination is Requested

Reexamination is requested of all claims 1-20 of the '939 patent in view of the cited-references which are listed on form PTO-1449 submitted herewith

## III. Explanation of Pertinency and Manner of Applying Cited Art to the Claims

In accordance with the requirements set forth in 35 U.S.C. §302 and 37 C.F.R. §1.510(b)(2), the cited-references are applied to independent claims 1, 7 and 15 and their respective dependent claims, of the '939 patent, as follows:

### A. The '899 patent

The '899 patent describes how resumes in printed form are converted to a digital image by means of an optical scanner. The image is analyzed to determine areas of contiguous text which are processed by a character recognition unit to generate an ASCII text form of the document. See col. 2, lines 50-59. Text analysis is described from col. 9, line 30, to col. 16, line 26. During textual analysis, predefined text patterns are detected, (See col. 9, lines 39-40), from which a "template" is filled using the detected text patterns, which in turn is stored in an output file. See col. 11, line 61 to col. 12, line 3. "This output file can be altered by the user." Col. 12, line 3, emphasis added. The output from the extractor can be used in many ways. "For example, it can be saved in a computer file, displayed on an output device such as a cathode ray screen, printed, or placed in a database for future retrieval." Col. 12, lines 6-10. See also, col. 16, lines 6-10 and 22-23.

The text extraction method uses a "grammar" to extract text patterns of interest. Col. 9, lines 53-54. The grammar is defined by "pattern objects" formed into "synonyms" and "classes." See col. 9, lines 58-59. "A synonym is a collection of patterns used for the same word. For example, 'January,' 'Jan,' 'Jan.' are all synonyms for January." Col. 10, lines 8-11. A "class" is "a collection of patterns . . . which collectively relate to the same type of object. For example, 'Jan 12, 1977,' 'Oct. 27, 1959' and '12/01/57' are all in the class called

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'DATES'." Col. 10, lines 11-15. As noted below, this grammar is identical to that used in the DEFT system from TRW.

The '899 patent is silent on the relationship of users to the documents, whether there are multiple users and any specific mechanism to enable a user to alter an output file as suggested at col. 12, line 3. Patentee believes that the "user" in the '899 patent is a company that is "using" the software to extract data from third-party job-seekers, or multiple employees of the company that are "using" the software over a network, but *not* the job-seekers (i.e., the authors of the documents) themselves.

#### *B The Noah Publication*

The "DEFT" system from TRW described in this publication is mentioned at Column 3, lines 15-22 of the '939 Patent. This system was described in the patent as being a preferred implementation of the text data extraction software to "selectively convert information from the format of the . . . resume . . . to the format of the . . . database." No other information was provided.

According to this reference, the DEFT system "was developed under the assumption that a user would always be in the loop; it was not intended to run autonomously." p. 242. The DEFT system also has utilities and functions which "refine the data and re-formulate it into frames which can be presented to a user for review, editing, and submission to a downstream application or database." p. 237.

The DEFT system may receive documents from multiple sources (i.e., it is intended to be embedded in a message handling system) through a "message queue." The text typically processed by DEFT included government cables, wire service input, native wire services, an existing full-text database, CD-ROM, optical character recognition (OCR) and so on. See page 238, paragraph 5.

DEFT also uses patterns to locate data of interest in text. See page 240, paragraph 3. "Lexicons are of two types: list and pattern. The list lexicon associates a set of synonyms (or spelling variants) with a given object . . . . The pattern lexicon is used when the textual variations associated with an object cannot be specified. For example, all possible monetary values cannot be conveniently enumerated, but a single pattern describing monetary values in terms of digits, punctuation, and denomination strings can be detected." Page 240, paragraph 4. Attributes may



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specify a normalized form of data. See page 240, paragraph 5. These lexicons in DEFT are similar to the grammars of the '899 patent.

During execution, DEFT creates a "tag file," which is a list of textual patterns identified by DEFT in the text or data created by an extraction function. See page 40, top two lines. The data elements in the tag file are constructed into "frames." In particular, when a pattern is found in the text and that gives rise to a slot value of a type defined for a given frame class, the slot is automatically mapped to any frame whose scope encompasses the location of the pattern. Thus, if names of corporations occur within a two sentence range of a frame defined by a pattern of words indicative of a joint venture, a slot of the frame for the names of corporations would be filled by the instances of the names of the corporations occurring within that two sentence range. See page 241, paragraphs 4 and 5.

"Another important DEFT tool is frame review. . . This package therefore supports simultaneous display of messages and the frames derived from them, providing highlights to show where slot values were extracted. Menus of valid values drawn from the lexicons assist the user in filling slots that were omitted by DEFT." Page 242, paragraph 5. Terms in the text are marked with SGML-like tags to indicate their properties. Page 244, paragraph 5. The lexicons (which, incidentally have the same format as the grammars, and hence output templates in the '899 patent) also may be defined through an X/Motif graphic user interface. Page 242, paragraph 3.

DEFT does not describe the relationship of the "user" that reviews a document to the original document. Given the context of DEFT, however, patentee submits that it does not appear that the user is the source of the original document. Rather, the "user" is a person running the DEFT software who is not the author/source of the document. It does not appear logical that government cables, wire service input, and native wire services would each review the extracted data that they provide. Rather, it would appear from the reference that the people operating the DEFT system (e.g., a government monitoring service) would review the original and extracted data, since native wire services and authors of cable wire service articles would presumably be unwilling to do so and no mechanism for securing this feedback (technologically or logistically) is described. Accordingly, patentee believes that the originator of the document would not review extracted data.

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*C. The '497 Patent*

The '497 patent is prior art because it is a patent granted on a patent application filed (on August 10, 1995) before the presumed date of invention (the filing date of December 21, 1997) of the '939 patent. The '497 patent describes a system that was accessible at [www.monster.com](http://www.monster.com). See col. 6, lines 58-60. If true, the web site itself would be prior art for being in public use more than one year prior to the '939 filing date.

In this system, a "communication part 102 is provided to allow access to the system through communications with other computers connected to the network. According to the preferred embodiment, the network may include access over the Internet to any number of external computer systems. . . ." Col. 3, lines 8-13. The system may include a resume base. The access to the system through the communication port may be effected through hypertext markup language (HTML) pages. Col. 4, lines 15-20.

"When a user selects the option of creating a resume . . . [the system] passes information for the fields of the specified base from the user's computer through the communication port into the selected database record." Col. 5, lines 24-29. "The resume base is a collection of resume records . . . [including] fields specifying name, address, telephone number, email address and narrative fields containing descriptive information in the form of a cover letter, a description of key skills, and identification of a predetermined number of current and previous positions. A specification of term of employment at current and previous positions, and a description of educational background. The fields in a resume record may be populated through the use of a form presented to the user. The resume record may also include fields for a user password and a field that is used to designate the record as a submission to an accessible resume pool or a specified job." Col. 5, lines 30-43. Thus, the '497 patent discloses the use of a structured form to present fields for insertion of data by one or more applicants for submission to the database.

According to the '497 patent, one field used in the resume record includes a field that is used to designate the record as a submission to an accessible resume pool or a specified job." Col. 5, lines 32-43. Notably, the three types of submission noted on part of the supplemental inquiry form in the '939 patent are "open, confidential or private." See Fig. 6C. These correspond to the types in the '497 patent which are: "maintaining the resume on the system without submission [private], submission of the resume to a resume pool accessible to

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subscribing employers [open]; or submission of the resume as an application to any posted job listing." Col. 5, lines 44-49

The '497 patent does not state that resume text may be supplied and automatically extracted to obtain an initial set of data for the fields displayed in the form. Rather, it appears that this is done entirely by the user.

#### *D. The PCT Publication*

The PCT publication describes a system, which, in its broadest description, is for brokering transactions between sellers and buyers of goods and services. See Abstract. However, the example provided in the patent relates to hiring personnel. Page 1, line 8. The "seller" in this example would be a job candidate. The system includes a "seller's interface" that enables sellers to "interactively enter information including multimedia information, into the database." Page 1, lines 28 and 29. Multiple sellers and multiple buyers are connected to the system through a network (see page 28).

The PCT publication also describes an interactive process through which information about the candidate may be placed into a database. In particular, the candidate is interviewed to collect information such as the position the seller seeks, desired salary and geography, and experience. In addition to this information, freeform text such as a work sample, still images such as a resume, or multimedia information may be incorporated into the profile in the database. See page 5, lines 16-24. With respect to resumes, the PCT publication describes that, with a scanner, the seller's interface "can accept scanned-in documents, for instance work samples or a resume. The seller's interface may optionally run the document through a character recognizer to produce free form text. Selected keywords may also be identified for use in retrieval. To correct character recognition errors, the seller's interface would present the resulting text to the seller for review and correction." See page 13, lines 1-10.

One difference between PCT publication and the system in the '939 patent is that character recognition and text extraction in PCT publication are performed on the "seller's interface" and not at a remote location. The PCT publication does not appear to state that the keywords or resulting text would be extracted by fields or presented in a structured form for review by the Applicant.

U.S. Patent No. 5,999,939

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The following table shows how the references described above, if combined, could be used to derive a system that meets each limitation of all the claims of the '939 patent. This table is not an admission, however, that one of ordinary skill would make the combination or that there is a motivation in the prior art to do so or that if such combinations were made that the claims are invalid over such a combination

Facilitating the accurate transfer of information from each of a plurality of nonuniformly formatted source data streams into a structured database (Claims 1, 7, and 15)	Noah publication/'899 patent. The Noah publication describes transferring news/articles from multiple sources into a database. The '899 patent refers to submitting resume data from multiple job applicants.
Supplying digital data representing each of a plurality of source data streams from a plurality of users, each said source data stream containing data corresponding to multiple discernible source data strings (Claims 1, 7, and 15)	Noah publication/'899 patent, '497 patent. The Noah publication suggests a plurality of sources, e.g., wire news services. The '899 patent may be used over a network where multiple operators extract data from the resumes of third-parties. The '497 patent suggests submitting resume data from multiple job applicants.
Processing said digital data for extracting selected ones of said source data strings and generating related target data strings (Claims 1, 7, and 15)	Noah publication/'899 patent
displaying a structured form comprised of multiple fields, each field being capable of accommodating a data string and wherein one or more of said fields have said target data strings inserted within (Claims 1, 7, and 15)	Noah publication/'899 patent, '497 patent. The '899 system produces a structured output that corresponds to a database, e.g., of news articles. The '899 patent produces a database of resumes. The '497 patent shows multiple fields in a database, but no automatic extraction of data for the fields.
enabling each user to modify and/or accept said target data strings inserted within said displayed form corresponding to said source data stream originating from said user (Claims 1, 7, and 15)	Noah publication/'899 patent, '497 patent. The Noah publication and '899 patent suggest altering the output file to correct extracted text, but the "user" performing this task appears to be a separate "user" of the software rather than the author of the document. If the "user" in the claim is also the original source of the document (as the claims in the '939 patent require), these references do not appear to teach this limitation.  The '497 patent forms permit a user (e.g., job hunter) to arbitrarily enter/edit text in the form. This reference does not appear to teach, however, enabling the author of the document to modify target data strings that have been extracted from a nonuniformly formatted document.
storing data corresponding to said data strings from said form fields into a database. (Claims 1, 7 and 15)	Noah publication/'899 patent, '497 patent. Each suggests storing data in a database, although the '497 patent does not teach storing automatically extracted data and the '899 patent and Noah publication do not teach storing extracted data that has been presented to the originator for editing.
supplying and displaying steps performed through remote communication interface, such as Internet (claims 2, 3, 8, 9, 10, 11, 15, 16)	A combination of the Noah publication with the '497 patent could result in submitting text to the Noah publication over the internet, and returning over the Internet a form containing the extracted for display, although patentee submits that hindsight is required to combine these references into such a system.

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displaying said source data stream with the displayed structured form (claims 4 and 17), and returning the source data stream from the data extractor to display it (claim 18)	The Noah publication suggests providing both the message and the extracted frames to a user. If the "user" is the source of the document (as the '939 claims require), however, the Noah publication does not appear to teach this step.
enabling a user to copy selected portions of said source data stream into selected fields of said form (claims 4, 12 and 17)	Windows (also prior art) inherently enables any user to copy data from one displayed area to another. Patentee believes that the system described in the '497 patent was intended to be compatible with Windows.
wherein one or more of said target strings are essentially equivalent to said extracted source data strings (claims 5, 13 and 19)	The Noah publication suggests normalizing, for example, country names.
supplying one or more supplemental data strings in response to a supplemental inquiry form (claims 6, 14 and 20)	The '497 patent and the PCT publication present one or more forms to collect various information. The number of forms used to collect it is immaterial. Such supplemental data includes the privacy associated with the resume, as in the '497 patent.
The displayed structured form additionally displays fields having said supplemental data strings inserted within. (claims 6, 14 and 20)	The '497 patent and the PCT publication present the supplemental information in a form to the user along with other resume information.

#### IV. Conclusion

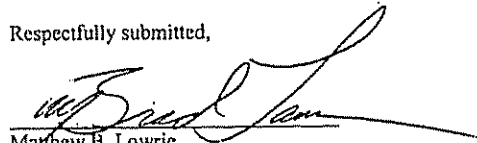
Requester respectfully requests confirmation of the patentability of all claims of the '939 patent over the cited references. Requester seeks an order denying the Request for Reexamination or, instead, an order granting the reexamination request coupled with a first action allowance of all claims of the '939 patent. In the event that the reexamination request is denied, Requester asks that the appropriate portion of the fee for requesting reexamination be refunded to deposit account 23/2825 in accordance with 37 C.F.R. §1.515(b) and §1.26(c).

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If there are any questions regarding this Request, please call the Requester's attorney at the telephone number listed below.

Respectfully submitted,



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Reg. No. 38,228  
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(617) 720-3500

Docket No.: H00644/70004 (MBL)  
Date: March 20, 2003  
xNDDx

ATTORNEY DOCKET NO.: H00644.70004 US (MBL)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent of:	de Hilster et al.	Reexam Control No.:
Patent No.:	5,999,939	Reexam Filed: Herewith
Issued:	December 7, 1999	
Serial No:	09/019,948	
Filed:	February 6, 1998	
For:	SYSTEM AND METHOD FOR DISPLAYING AND ENTERING INTERACTIVELY MODIFIED STREAM DATA INTO A STRUCTURED FORM	

CERTIFICATE OF MAILING UNDER 37 C.F.R. §1.8(a)

The undersigned hereby certifies that this document is being placed in the United States mail with first-class postage attached, addressed to Box Reexam, Commissioner for Patents, Washington, D.C. 20231, on March 21, 2003

  
\_\_\_\_\_  
Jeanne Spilner

Box Reexam  
Commissioner for Patents  
Washington, D.C. 20231

SUBMISSION OF PRIOR ART UNDER 37 C.F.R. 1.501

Sir:

The undersigned herewith submits in the above-identified patent the prior art (including copies thereof) which is pertinent and applicable to the patent and is believed to have a bearing on the patentability of claims 1-20. Each of the references listed below are listed on the attached form PTO Form 1449 (modified). Applicant requests that the Examiner initial and sign the attached form.

Taylor, U.S. 5,832,487, November 3, 1998;

Sobotka et al., U.S. 5,164,899, November 17, 1992;

Eagleview, Inc., WO 95/24687 (PCT/US95/03117), September 14, 1995; and

NOAH, William W. and Rollin V. WEEKS, "TRW DESCRIPTION OF THE DEFT SYSTEM AS USED FOR MUC-5," pp. 237-248

A detailed explanation of each of these references is contained in the "Requester's/Patent Owner's Detailed Request For Ex Parte Reexamination Pursuant To 37 C.F.R. §1.510(b)" which is submitted herewith. While it is believed that each of the references has a bearing on the

609818.1

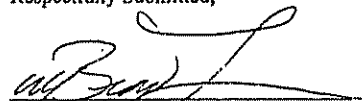
U.S. Patent No.: 5,999,939

-2-

Art Unit: 2171

patentability of claims 1-20 of the de Hilster patent, the subject matter claimed differs from the references and is believed patentable thereover

Respectfully Submitted,



Matthew B. Lowrie, Reg. No. 38,228  
M. Brad Lawrence, Reg. No. 47,210  
Representatives for Requester/Patent Owner  
WOLF, GREENFIELD & SACKS, P.C.  
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(617) 720-3500

Docket No.: H00644.70004.US (MBL)  
Date: March 20, 2002  
xNDDx



U.S. Patent

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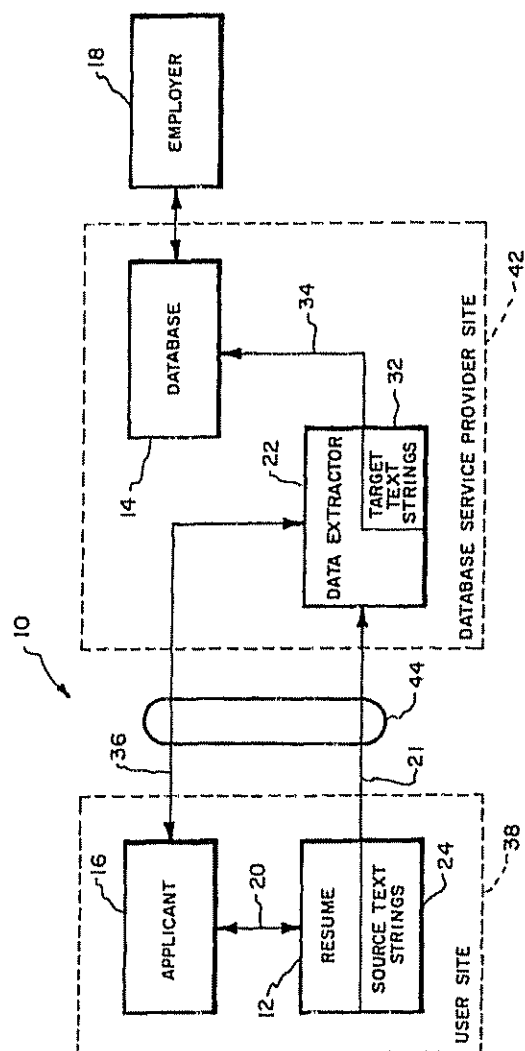


Fig. 1.

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26  
 EXPERIENCE:  
 24a 24b 24c 24d  
 11/96 - 1/97 Relocation Assistance Coordinator  
 Tokyo Central Agency (TCA, Inc.) Tokyo, Japan  
 Worked in a completely bilingual environment, involved in all aspects of Expatriate relocation.  
 Conducted various orientations focusing particularly on life in Tokyo assistance in immigration  
 and other official procedures, house hunting and school arrangements. Constantly required to use  
 various skills in interpretation, translation, negotiation and cultural awareness.

*Fig. 2.*

28a	28b	28j	28k	28l	28m	14	30a
	...				...		30b
							30c
							...
							30q

*Fig. 3.*

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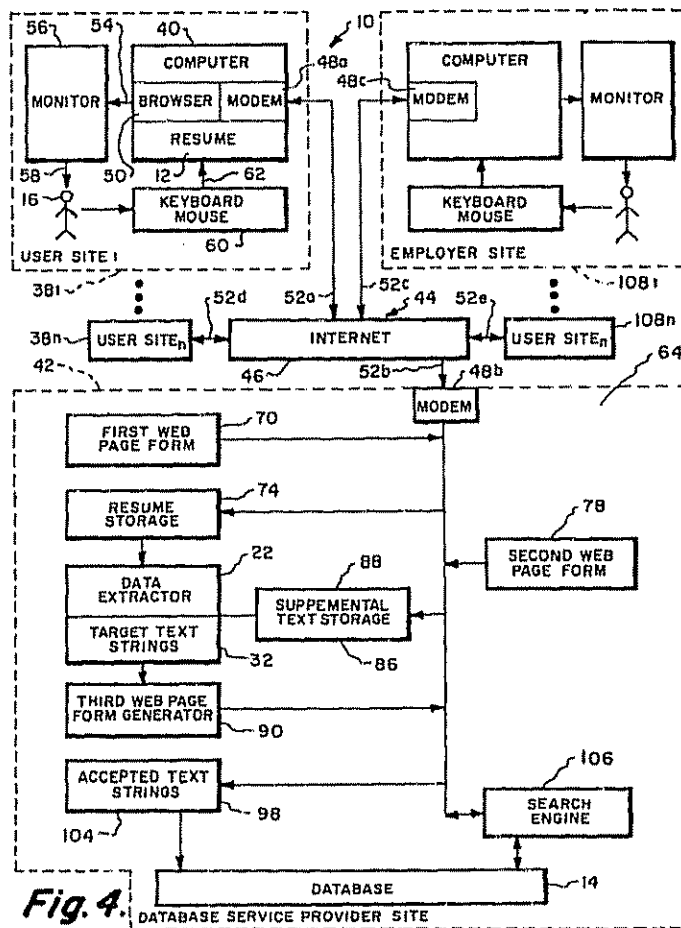


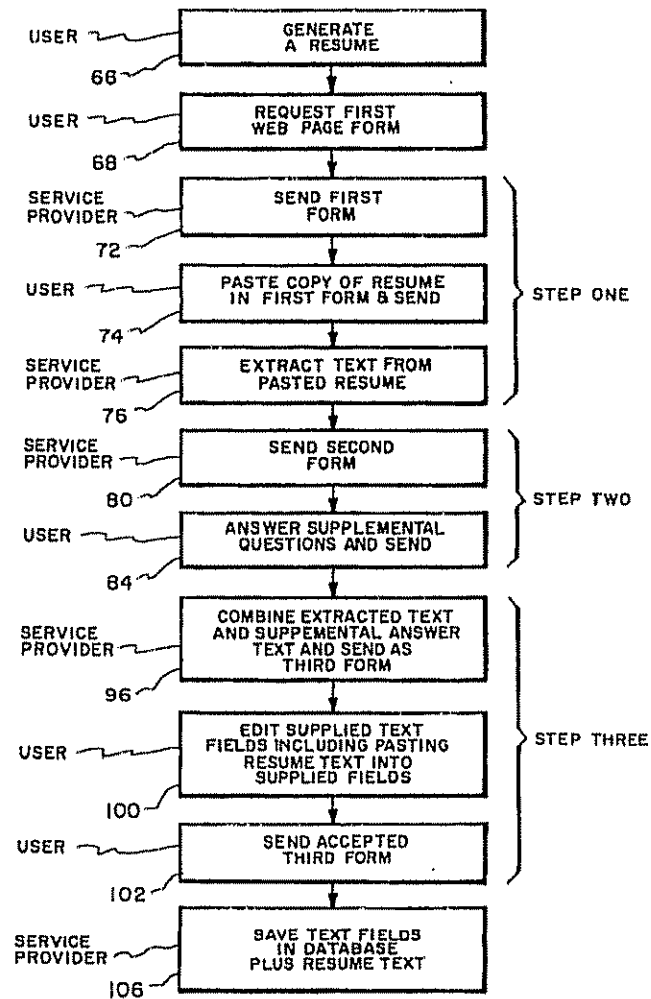
Fig. 4

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*Fig. 5.*

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**JobEngine****Post Resume**

Help?

This page is for posting a new resume. Click here to [Change](#) or [Remove](#) a previously posted resume.

**Instructions:**

There are 3 steps to post your resume:

- Paste in your resume
- Answer a few questions.
- Review our work to ensure that the information in your resume is correct. Then enroll.

And only a few rules:

- Items labelled in Red are Required.
- Items labelled in Black are Optional, but we strongly suggest that you take a few minutes to answer the questions. Your answers provide information, not typically found in a resume, that employers want to know before they contact you.

Don't worry -- nothing will be saved in the database without your review and approval.

**STEP ONE – PASTE IN YOUR RESUME**

Copy your resume from a text file on your computer and paste into the text block below

Be sure your contact information (name, address, phone number(s) and email address) appears only at the top of the resume, and that nothing in the body of your resume (like your current job description) identifies you. This protects your privacy. This step is Required.

Resume:

Arthur Smith  
 1234 Main Street  
 Sausalito, California 94965  
 Tel: 415-555-5432 Fax: 415-555-5543  
 E-mail: asmith@aol.com

**EXPERIENCE:**

11/96 - 7/97 Relocation Assistance Coordinator  
 Tokyo Central Agency (TGA Inc.) Tokyo, Japan

**Fig. 6A.**

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**JobEngine****Post Resume**

11/01/99

**STEP TWO -- ANSWER A FEW QUESTIONS**

There's some additional information, not typically in your resume, that is very helpful to employers. Most of these questions are optional! However, you should try to answer as many as possible. It will only take a few minutes. promise.

**Job Goals****Functional Specialties**

GENERAL MANAGEMENT  
Senior Management (CEO Pres, COO, GM)  
Branch & Regional Management  
INFORMATION TECHNOLOGY MANAGEMENT

**Type of Position**

Full Time

82b

82a

**Expected Compensation**

open

82c

**Travel**

Moderate (25%-50%)

82d

**Relocation**

Yes - I can relocate to:

Areas

most anywhere

82e

**About You****Citizenship**

U.S. Citizen

82g

**Current Clearances**

No

82h

**Enrollment****Type**

- ☒ Open - Your full resume, including contact information, will be available to employers.
- ☐ Confidential - Your full resume, except your contact information, will be available to employers. Those interested in contacting you can do so via email forwarded to you confidentially.
- ☐ Private - No employer can see your resume. It is retained in JobEngine's Resume Center as a convenience to you when applying to jobs.

82i

Ready for Step 3

Comments, questions or suggestions? Please email us at [support@JobEngine.com](mailto:support@JobEngine.com)

A ZDNet and i-Search Site



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**Fig. 6B.**

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**jobEngine****Post Resume****STEP 3 - REVIEW INFORMATION AND ENROLL**[Help?](#)

We know you hate to enter again what you have already put into your resume. So, we've tried first to find information we need. Please review the information carefully and correct errors. A copy of your resume included for copying and pasting as needed. This is an important step. Remember - Items labeled in Red Required.

Be sure to scroll through all the data in this window, make all needed corrections, select a Resume Access Code and password, and then Post your resume.

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Contact Information (confidential) 94d 94b 94c 94d

Name Arthur Smith

Address 1234 Main Street 94e 94f

City, State Zip San Jose California 94965 94i 94g 94h

Country USA

Phone Home (415-555-5432) Work Fax (415-555-55

Email asmith@isp.com

Web Page

**Experience**

Your three most recent positions. The order of jobs is not important. For each job entered, information is in each of the four columns with red labels.

Start Date	End Date	Company	Title
11/96	7/97	TGA Inc.	Relocation Assistant
3/95	10/96	NCR English Language Inst	English Teacher
8/94	2/95	Los Angeles	Sales Associate

Year First Employed

5/93

32

94n

**Education**

Your three most recent degrees. For each degree entered, information is required in each of the two column red labels. Information in the other columns is helpful.

Year	Degree	School	Major
March, 1	Bachelor of Ar	University of California	Speech Communications

**Fig. 6C. (PART 1 OF 3)**

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## Job Goals

Functional Specialties

Senior Management (CEO Pres, COO, GM)  
Branch & Regional Management  
INFORMATION TECHNOLOGY MANAGEMENT

Type of Position

Full Time

Expected Compensation

Open

Travel

Moderate (25%-50%)

Relocation

Yes - I can relocate to:

Areas most anywhere

## About You

Citizenship

U.S. Citizen

Current Clearances

No

## Please Help Us

We are curious about how you learned about JobEngine. Please help us by selecting one of the choices

## Access Keys

Select an access code and password for future access to your resume

Resume Access Code

arthur

Password

Password (again)

## Posting

Neither Zef Davis nor i-Search is responsible for the verification of data provided and shall not be liable for any errors, omissions, or otherwise, contained in the information posted. Further, we assume no obligation with respect to the compliance of the information or a process with applicable governmental laws, rules and regulations of any kind regarding employment practices. With respect to confidentiality, Zef Davis and i-Search will use reasonable measures to delete the applicant's identity, but shall not be responsible for unintentional disclosure of confidential information or exposure of applicant through descriptive information contained in the body of the resume.

I hereby accept the agreement posted by resume.

Your resume text for cutting and pasting information a

[Back to Form](#)

Processed by i-Search: 151-9000-5279

12'

Arthur Smith  
1234 Main Street  
Sausalito, California 94265  
Tel: 415-555-5432 Fax: 415-555-5543  
E-mail: asmith@isp.com

EXPERIENCE:

**Fig. 6C. (PART 2 OF 3)**



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11/56 - 7/97 Relocation Assistance Coordinator  
Tokyo Central Agency (TGA Inc.) Tokyo, Japan  
Worked in a completely bilingual environment, involved in all aspects of Expa  
Conducted various orientations focusing particularly on life in Tokyo assista  
other official procedures, house hunting and school arrangements. Constantly  
skills in interpretation, translation, negotiation and cultural awareness.

3/95 - 10/96 English Teacher  
NCR English Language Institute, Tokyo, Japan  
Neva Inter cultural Institute, Tokyo, Japan  
Experienced in all aspects of teaching English as a foreign language, includi  
T.O.E.F.L. Actively participated in recruitment of new students, student lev  
progress analysis. Voted Teacher of the Year by students and upper management

8/94 - 2/95 Sales Associate  
24 Nordstrom Los Angeles, CA  
Consistently ranked as highest in customer sales and satisfaction in a compet  
environment. Sharpened communicational skills and refined fashion sense gave  
privilege of an honest and bright salesperson.

5/93 - 6/94 Resort Hotel Supervisor  
Pacific Islands Club, Guam, U. S. A.  
Thrived in a resort where the primary focus was to initiate guest interaction  
department of sports, entertainment and activities. Assumed direct responsib  
sports complex, training the constant influx of new employees, inventory and  
introduction of inventive and efficient motivational techniques) and complete

## EDUCATION:

Bachelor of Arts - Speech Communications  
University of California at Santa Barbara  
Graduation: March, 1993

Major Courses of Study & Interest  
Interpersonal Relations, Creative Writing, Psychology, Sociology

CERTIFICATES: National Japanese Proficiency Exam - Level 2  
INTERESTS: Travel, Japanese, Scuba Diving, Tennis

{PGCNT}  
{PAGE}

Comments, questions or suggestions? Please email us at [support@richfonix.com](mailto:support@richfonix.com)

---A ZDNet and i-Search Site---



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job Engine and "Matchmakers for IT Professionals" are part of the marks of Ziff-Davis and  
Interactive Search.

**Fig. 6C. (PART 3 OF 3)**

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**Arthur Smith**

1234 Main Street  
 Sausalito, California 94965  
 Tel: 415-555-5432 Fax: 415-555-5543  
 E-mail: asmith@isp.com

12

**EXPERIENCE:****11/96 - 7/97 Relocation Assistance Coordinator****Tokyo Central Agency (TCA Inc.) Tokyo, Japan**

Worked in a completely bilingual environment, involved in all aspects of Expatriate relocation. Conducted various orientations focusing particularly on life in Tokyo assistance in Immigration and other official procedures, house hunting and school arrangements. Constantly required to use various skills in interpretation, translation, negotiation and cultural awareness.

**3/95 - 10/96 English Teacher****NCR English Language Institute, Tokyo, Japan****Nova Inter cultural Institute, Tokyo, Japan**

Experienced in all aspects of teaching English as a foreign language, including Phonics, and T O E F L. Actively participated in recruitment of new students, student level assessment and progress analysis. Voted Teacher of the Year by students and upper management.

**8/94 - 2/95 Sales Associate****Nordstroms, Los Angeles, CA**

Consistently ranked as highest in customer sales and satisfaction in a competitive retail environment. Sharpened communicational skills and refined fashion sense gave customers the privilege of an honest and bright salesperson.

**5/93 - 6/94 Resort Hotel Supervisor****Pacific Islands Club, Guam, U. S. A.**

Thrived in a resort where the primary focus was to initiate guest interaction in the unique department of sports, entertainment and activities. Assumed direct responsibility for managing the sports complex, training the constant influx of new employees, inventory and ordering of supplies, introduction of inventive and efficient motivational techniques and complete area maintenance.

**EDUCATION:**

Bachelor of Arts - Speech Communications  
 University of California at Santa Barbara  
 Graduation: March, 1993

**Major Courses of Study & Interest**

Interpersonal Relations, Creative Writing, Psychology, Sociology

**CERTIFICATES:** National Japanese Proficiency Exam - Level 2

**INTERESTS:** Travel, Japanese, Scuba Diving, Tennis

**Fig. 7.**

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# **SYSTEM AND METHOD FOR DISPLAYING AND ENTERING INTERACTIVELY MODIFIED STREAM DATA INTO A STRUCTURED FORM**

This application claims the benefit of U.S. Provisional Application No. 60/068,404 filed Dec. 21, 1997.

## **BACKGROUND OF THE INVENTION**

The present invention relates to data processing systems for entering information into and accessing information from large structured databases and in particular to those systems which allow multiple independent users to enter information from nonuniformly formatted documents/files and to interact with the system to assure the accuracy of the database entries.

The use of databases for storing data records which can be readily searched is well known. A typical application of large structured databases would be a system for matching jobs and applicants. When used in conjunction with a search engine, a program that can search for matches between inquiry data and data stored within the database, such a system significantly reduces the manual efforts required to match the needs of employers (job providers) and applicants (job seekers). In order to enter applicant data into the database, source documents/files (typically, nonuniformly formatted resume) can be used. Since the format of text data contained within a resume is typically not standardized, text data extraction software is used to retrieve data for entry into the database. Typical of such data extraction software is that described in U.S. Pat. Nos. 5,164,899 and 5,197,004.

## **SUMMARY OF THE INVENTION**

The present invention is directed to a system for facilitating the accurate transfer of information from a source data stream, e.g., a document/file, to a highly structured database and more particularly to such systems capable of accepting nonuniformly formatted documents, e.g., text documents such as resumes, from a plurality of users via a remote communication interface, e.g., the Internet, and for extracting information therefrom via a procedure which includes user participation to assure the transfer of appropriate entries into the database.

Embodiments of the present invention provide an interactive path for a user (typically, the author of the source document/file) to interactively modify the extracted information. In a preferred embodiment, this interactive path is provided via the Internet and the extracted information can be altered by editing and/or selectively copying portions of the source document/file to supplement and/or modify the extracted information.

A preferred system for facilitating the accurate transfer of information from each of a plurality of nonuniformly formatted source data streams into a structured database comprises (1) means for supplying digital data representing each of a plurality of source data streams from a plurality of users, each source data stream containing data corresponding to multiple discernible source data strings, (2) data extraction means for extracting selected ones of the source data strings and generating related target data strings, (3) means for displaying a structured form comprised of multiple fields, each field capable of accommodating a data string and wherein one or more of the fields have the target data strings inserted within, (4) means for enabling each user to modify the target strings inserted within the displayed form corresponding to the source data stream originating from the user

before accepting the form, and (5) means for storing data corresponding to the data strings from the form fields into the database.

In a further aspect of the present invention, the providing means uses a remote communication interface, preferably using the Internet, to supply the source document/file to the data extraction means and, subsequently, to return the form having target data strings within its fields.

The novel features of the invention are set forth with particularity in the appended claims. The invention will be best understood from the following description when read in conjunction with the accompanying drawings.

## **BRIEF DESCRIPTION OF THE DRAWINGS**

FIG. 1 comprises a simplified block diagram of a system for entering resume data into a database and interactively modifying and/or supplementing such entered data;

FIG. 2 is a portion of the exemplary resume of FIG. 7, showing the extraction of source text strings based on the syntax of surrounding text;

FIG. 3 is a diagram of the structure of an exemplary database comprised of a plurality of applicant data records;

FIG. 4 comprises an expanded block diagram of the flow of the data entry system of FIG. 1;

FIG. 5 comprises a simplified flow chart of the data entry flow of FIG. 4;

FIGS. 6A-6C show exemplary forms for providing resume and/or supplementary data to the database service provider of FIG. 1; and

FIG. 7 shows an exemplary resume used in conjunction with the forms of FIGS. 6A-6C.

## **DESCRIPTION OF THE PREFERRED EMBODIMENTS**

The present invention is directed to a system for facilitating the accurate transfer of information from a source data stream, e.g., a document/file, to a highly structured database and more particularly to such systems capable of accepting nonuniformly formatted documents, e.g., text documents such as resumes, from a plurality of users via a remote communication interface, e.g., the Internet, and for extracting information therefrom via a procedure which includes user participation to assure the transfer of appropriate entries into the database.

Embodiments of the present invention provide an interactive path for a user (typically, the author of the source document/file) to interactively modify the extracted information, e.g., according to the source document/file. In a preferred embodiment, this interactive path is provided via the Internet and the extracted information can be altered by editing and/or selectively copying portions of the source document/file to supplement and/or modify the extracted information.

FIG. 1 comprises a simplified block diagram of a system 10 for entering data from a source data stream 12, e.g., a text document/file such as a resume, into a database 14 and interactively modifying and/or supplementing such entered data. In an exemplary job search environment, the interactive system 10 provides an improved system and method for accurately transferring information from resume source document/file 12, hereinafter referred to as resumes and preferably independently generated by a plurality of applicants 16, to the database 14 where it is accessible (preferably via a search engine as described further below) to one or

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more employers 18. Resumes are preferably used as the source documents/files 12 in this environment since resumes are a well-accepted tool for providing information from an applicant to an employer and, as such, they typically already exist.

As shown in FIG. 1, the resume 12 is typically generated via path 20 using a word processor (not shown). Interactions between the applicant 16 and resume 12 typically continue via the word processor until a satisfactory resume 12 is generated and stored as corresponding digital data. However, resumes are generally nonstructured or loosely structured (and nonuniformly formatted between users) text documents that are only intended to be human readable e.g., by the employer 18 and the applicant 16, and are typically not directly useable in the highly structured database 14. Consequently, the resume 12 is supplied via path 21 to a data extractor 22, preferably implemented as text data extraction software (e.g., the DEFT software developed by TRW as part of their InfoWeb™ system), to selectively convert information from the format of the unstructured (or loosely structured) resume 12 to the format of the highly structured database 14. Essentially as shown in FIG. 2 (a portion of the exemplary resume of FIG. 7), the data extractor 22 isolates one or more discernible source data strings, e.g., text data strings 24, within the resume 12 and, according to the content of the source data strings, e.g., 24a-24c, and using the syntax of surrounding keyword data, e.g., text strings 26, determines a correlation between source text strings 24 and data fields 28 that are to be entered into the database 14. For example, the keyword text string 26 ("EXPERIENCE") identifies the following source text strings 24 as being related to the applicant's job experience due to the syntax of the surrounding text, e.g., the keyword "experience", the existence of dates, the identification of a company (Inc.), etc.

As shown in FIG. 3, an exemplary applicant database 14 is comprised of a plurality of fixed length records 30, each corresponding to a different one of a plurality of applicants 16. Each record 30 is comprised of a plurality of data fields 28 having predefined formats and lengths, corresponding to searchable pieces of information.

Table I shows an exemplary partial list of definitions of the information stored in the data fields 28 of the database 14 of FIG. 3.

TABLE I

Data Field	Definition
28j	Most recent job start date
28k	Most recent job end date
28l	Most recent job company
28m	Most recent job title
28n	Next job start date
28o	Next job end date
28p	Next job company
28q	Next job title

First, the data extractor 22 extracts source data strings, e.g., text strings 24a-24c, from the resume 12. Optionally, the text format of one or more of the source text strings 24 are then altered by the data extractor 22 to generate target data strings, e.g., text strings 32, of a standardized format. For example, a date text string could be standardized (e.g., March 12, 1993 could be changed to 3/12/93). Otherwise, the stored

target text string 32 is essentially identical to the source text string 24. As described further below, each target text string 32 preferably directly corresponds to the data fields in the database 14 (e.g., the target string 32 corresponding to source text string 24a corresponds to 28j) and thus, following the modification/acceptance process described below, target text strings 32 are stored via path 34 into the database 14 (following any conversions required by the format of the database 14 and its fields 28).

However, due to lack of structure of the resume 12, the data extractor 22 (also referred to as a natural language processor) is susceptible to making an incomplete or erroneous correlations. Accordingly, the present invention provides an interactive path 36 that enables the applicant 16, generally the individual most acquainted with the contents of the resume 12, to modify the target text strings 32 to best correspond to the resume 12 and, thus, enhance the accuracy of the data stored in the database 14.

FIG. 4 is an expanded block diagram of the system 10 of FIG. 1 showing the data flow which enables each user (i.e., applicant 16 in this exemplary environment) to interact with the information extracted by the data extractor 22 and thus assure the accurate transfer of information from the resume 12 into the structured database 14. The interactive system 10 is preferably comprised of one or more user sites 38 (including a computer 40 operated by the applicant 16) and a database service provider site 42 (generally an automated service) coupled to each other via a remote communication interface 44. In the following discussion, the remote communication interface comprises the Internet 46, the associated hardware and/or software at the user 38 and database service provider 42 sites, typically comprising a modem 48 and a web (Internet) browser 50, and the associated interconnections 52 between (typically phone lines and Internet Service Providers (ISPs)). However, other communication interfaces, e.g., a local area network (LAN) or a direct modem to modem or serial port to serial port connections, are also considered to be alternative remote communication interfaces.

Preferably, each user site 38 is comprised of the computer 40, e.g., a personal computer, having a display control output 54 that drives a display monitor 56 to generate a displayed output 58 and a data entry device, e.g., a keyboard/mouse 60, that directs operation of the computer 40 via control path 62. In contrast, while the database service provider site 42 may typically also include a monitor and a keyboard/mouse, it only requires a computer 64 that interfaces to the Internet 46.

Initially, the user 16 at user site 38 generates the source document/file, i.e., resume 12, at step 66 of FIG. 5. As previously discussed, this generation is interactive and proceeds until user 16 is satisfied with the results. However, the resulting resume 12 is generally unstructured relative to the highly structured form of the database 14.

As a next step, the user 16 requests a first web page form (step 68) via the Internet 46 to begin the process of interactively transferring the resume 12 to the database 14. The first web page form 68 (see FIG. 6A) is stored (see block 70) within computer 64 at the database service provider site 42 and is responsively provided back (see step 72) to the user site 38 via the Internet 46 (commencing STEP ONE) and displayed by the web browser 50 on the monitor 56. The user 16 then preferably provides the existing resume 12 back to the database service provider site 42 via a pasting operation used in conjunction with the web browser 50. In an exemplary Windows 95 environment, the user 16 launches the

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word processor, e.g., Microsoft Word, that had been used to generate the resume 12. Preferably, the user 16 then selects the entire resume document and copies it to the clipboard. Next, the user 16 pastes the resume 12 from the clipboard into a source data input field 70 of the first web page form 68 using the web browser 50, e.g., Microsoft Internet Explorer. Typically, this pasting removes any word processor formatting information and results in digital data (preferably formatted as ASCII text) representing the resume 12 being stored in the web browser 50. (Alternatively, the word processor formatting information can be extracted by the data extractor 22.) The web browser 50 is then used to send (see step 74) the first web page form 68 (now containing the resume 12) to the database service provider site 42 where the resume 12 is stored in resume storage 74. The data extractor 22 then extracts one or more source text strings 24 according to syntactical rules to establish a correspondence between the source text strings 24 (preferably saved as intermediary target text strings 32) and fields 28 of the database 14.

Next, STEP TWO of the process commences by the computer 64 at the database service provider site 42 sending a second web page form 78 (see FIG. 6B) at step 80 which is displayed via the web browser 50 on the monitor 56 at the user site 38. In this example, the second web page form 78 is a supplemental inquiry form that asks the user 16 one or more supplemental questions. In response, the user 16 fills in supplemental fields 82, e.g., by a pull-down field, free text entry, a radio selection, etc. This filled-in form is sent back to the database service provider 42 in step 84 where supplemental text strings 86 are stored in supplemental text storage 88.

STEP THREE of the process commences by the third web page form generator 90 at the database service provider site 42 generating a third web page form 92 (see FIG. 6C), a structured form having multiple fields 94 each field being capable of accommodating a text string within. Specifically, target text strings 32 (corresponding to source text strings 24) are inserted within fields 94 according to the syntax of the source document/file 12 and the definition (e.g., name, address, city, etc.) of each field 94. Additionally, the supplemental text strings 86 are inserted within the associated fields 94 of form 92. Preferably, the stored resume 12 from resume storage 74 is also added to the third web page form 92. Finally, the third web page form 92 is sent back in step 96 to the user site 38 where it is displayed by the web browser 50 on monitor 56.

The user 16 can now use the view the displayed form 92 to determine its accuracy. If the displayed data, including target text strings 32 and supplemental text strings 86, are accurate the user 16 sends back form 92 to the database service provider site 42 where the accepted text strings are extracted in block 98 and stored in database 14. However, as previously discussed, the displayed data is not always accurate. Accordingly, the user 16 can edit data supplied in the third web page form 92 (preferably including using the supplied resume 12) to cause the fields 94 of form 92 to more accurately represent the applicant's resume information. Using features of the web browser 50, the user 16 can in step 100 edit fields 94 and/or paste information from resume 12 (now part of form 92) to modify the data fields 94. The user in step 102 then sends the modified form 92 back to the database service provider site 42 where accepted text strings 104 from fields 94 are stored in the database 14 in step 98.

As an example of this modification process, it is noted that field 94n corresponding to the third "Company" under "Experience" has been filled in with the target text string 32

"Los Angeles". This is inaccurate since the data extractor 22 has apparently missed the company name, i.e., Nordstroms, and instead extracted the city name as the target text string 32. Therefore, the user/applicant 16 can identify this inaccuracy and either (1) edit the field 94n by typing in the correct entry or (2) select the source text string 24 from the copy 12 of resume 12 included on the third web page form and paste the proper text (Nordstroms) into field 94n. Accordingly, the user/applicant 16 has been given the opportunity to verify and correct the data before entering it into the database 14, thus assuring the accurate transfer of information into the database 14.

Once the information has been stored in the database 14, a search engine 106, preferably a software program that executes on the computer 64 at the database service provider site 42, can be used to match inquiries, e.g., from one or more employer sites 108 (preferably via the remote communication interface 44) to look for applicants 16 with specific attributes. For example, since the highly structured database 14 contains fields 28 corresponding to the schools attended by each applicant 16, the search engine 106 can, in response to a request from the employer site 108, search for applicants 16 who graduated from specific schools or any other criteria stored in the fields 28 of the database 14.

Although the present invention has been described in detail with reference only to the presently-preferred embodiments, those of ordinary skill in the art will appreciate that various modifications can be made without departing from the invention. For example, while a job search environment has been primarily described, the present invention can be useful in other environments where the source document is essentially unstructured relative to a highly structured database. Accordingly, the invention is defined by the following claims.

#### I claim:

1. A method for facilitating the accurate transfer of information from each of a plurality of nonuniformly formatted source data streams into a structured database, said method comprising the steps of:  
supplying digital data representing each of a plurality of source data streams from a plurality of users, each said source data stream containing data corresponding to multiple discernible source data strings;  
processing said digital data for extracting selected ones of said source data strings and generating related target data strings;  
displaying a structured form comprised of multiple fields, each field being capable of accommodating a data string and wherein one or more of said fields have said target data strings inserted within;  
enabling each user to modify and/or accept said target data strings inserted within said displayed form corresponding to said source data stream originating from said user; and  
storing data corresponding to said data strings from said form fields into a database.
2. The method of claim 1 wherein said supplying and displaying steps use a remote communication interface.
3. The method of claim 2 wherein said remote communication interface uses the Internet.
4. The method of claim 1 wherein said displaying step additionally includes displaying said source data stream and said enabling step includes enabling said user to copy selected portions of said source data stream into selected fields of said form.
5. The method of claim 1 wherein one or more of said target strings are essentially equivalent to said extracted source data strings

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6. The method of claim 1 additionally comprising the step of:

supplying one or more supplemental data strings in response to a supplemental inquiry form; and wherein said displayed structured form additionally displays fields having said supplemental data strings inserted within

7. A system for facilitating the accurate transfer of information from each of a plurality of nonuniformly formatted source data streams into a structured database, said system comprising:

means for supplying digital data representing each of a plurality of source data streams from a plurality of users, each said source data stream containing data corresponding to multiple discernible source data strings;

data extraction means for extracting selected ones of said source data strings and generating related target data strings;

means for displaying a structured form comprised of multiple fields, each field capable of accommodating a data string and wherein one or more of said fields have said target data strings inserted within;

means for enabling each user to modify said target data strings inserted within said displayed form corresponding to said source data stream originating from said user before accepting said form; and

means for storing data corresponding to said data strings from said form fields into said database.

8. The system of claim 7 wherein said means for supplying said digital data to said data extraction means comprises each said user submitting said digital data via a remote communication interface.

9. The system of claim 8 wherein said remote communication interface uses the Internet.

10. The system of claim 7 wherein said data extraction means additionally comprises means for returning said form via a remote communication interface.

11. The system of claim 10 wherein said remote communication interface uses the Internet.

12. The system of claim 7 wherein said means for enabling includes enabling each said user to copy selected portions of said source data stream into selected fields of said form.

13. The system of claim 7 wherein one or more of said target strings are essentially equivalent to said extracted source data strings.

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14. The system of claim 7 additionally comprising:

means for supplying one or more supplemental data strings in response to a supplemental inquiry form; and wherein

said displayed structured form additionally displays fields having said supplemental data strings inserted within.

15. A system for facilitating the accurate transfer of information from each of a plurality of nonuniformly formatted source data streams into a structured database, said system comprising:

a communication interface for supplying from each of a plurality of user sites a source data stream containing data corresponding to multiple discernible source data strings;

a data extractor for extracting selected ones of said source data strings from said source data streams and generating related target data strings and for returning said target data strings to said user sites;

display apparatus for displaying a structured form comprised of multiple fields, each field capable of accommodating a data string and wherein one or more of said fields have said target data strings inserted within;

data entry apparatus for enabling each user to alter said fields of said form corresponding to said source data stream originating from said user before accepting said form; and

a database for storing data corresponding to said data strings from said form fields.

16. The system of claim 15 wherein said communication interface uses the Internet.

17. The system of claim 15 wherein said display apparatus additionally displays said source data stream and said data entry apparatus enables said users to copy selected portions of said source data stream into selected fields of said form.

18. The system of claim 17 wherein said data extraction apparatus additionally returns said source data streams to its corresponding user.

19. The system of claim 15 wherein one or more of said target data strings are essentially equivalent to said extracted source data strings.

20. The system of claim 15 additionally comprising: means for supplying one or more supplemental data strings in response to a supplemental inquiry form; and wherein

said displayed structured form additionally displays fields having said supplemental data strings inserted within.

\* \* \* \* \*

ATTORNEY DOCKET NO.: H00644.70004 US (MBL)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE 66540 U.S. PTO

In re U.S. Patent of: de Hilster et al.  
Patent No.: 5,999,939  
Issued: December 7, 1999  
Serial No.: 09/019,948  
Filed: February 6, 1998  
For:

Reexam Control No.:

Reexam Filed: Herewith

90/006570

03/24/03

SYSTEM AND METHOD FOR DISPLAYING AND ENTERING  
INTERACTIVELY MODIFIED STREAM DATA INTO A  
STRUCTURED FORM

CERTIFICATE OF MAILING UNDER 37 C.F.R. §1.8(n)

The undersigned hereby certifies that this document is being placed in the United States mail with first-class postage attached, addressed to Box Reexam, Commissioner for Patents, Washington, D.C. 20231, on March 24, 2003

Jeanne Spinelli

Box Reexam  
Commissioner for Patents  
Washington, D.C. 20231

Sir:

Transmitted herewith are the following documents:

- ☒ Request For *Ex Parte* Reexamination Transmittal Form (PTO/SB/57)
- ☒ Requester's/Patent Owner's Detailed Request For *Ex Parte* Reexamination Pursuant To 37 C.F.R. §1.510(b)
- ☒ Submission of Prior Art Under 37 C.F.R. 1.501
- ☒ PTO Form 1449 (modified) and cited references
- ☒ U.S. Patent No. 5,999,939 to de Hilster et al
- ☒ Return Postcard

If the enclosed papers are considered incomplete, the Mail Room and/or the Application Branch is respectfully requested to contact the undersigned at (617)720-3500, Boston, Massachusetts

A check in the amount of \$2520 is enclosed. The Commissioner is hereby authorized to charge any deficit or credit any overpayment to the account of the undersigned, Deposit Account No. 23/2825. A duplicate of this sheet is enclosed.

Respectfully Submitted

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M. Brad Lawrence, Reg. No. 47,210  
Representatives for Requester/Patent Owner  
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Docket No.: H00644.70004 US (MBL)  
Date: March 20, 2002  
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66548 U.S. PTO

90/006570



Approved for use through 01/31/2004 OMB 0597-0750  
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.  
(Also referred to as FORM PTO-1449)

## REQUEST FOR EX PARTE REEXAMINATION TRANSMITTAL FORM

Address to:  
Assistant Commissioner for Patents  
Box Reexam 66548 U.S. PTO  
Washington, D.C. 20231

Attorney Docket No.  
H00644.70004.US (MBL)  
Date:  
March 20, 2003

This is a request for ex parte reexamination pursuant to 37 CFR 1.510 of patent number 5,999,939  
Issued December 7, 1999 The request is made by:

☒ patent owner. ☐ third party requester

2. ☒ The name and address of the person requesting reexamination is:

BrassRing Systems  
1528 South El Camino Real, Suite 100  
San Mateo, CA 94402

3. ☒ a. A check in the amount of \$2,520 is enclosed to cover the reexamination fee, 37 CFR 1.20(c)(i);

☐ b. The Commissioner is hereby authorized to charge the fee as set forth in 37 CFR 1.20(c)(i) to Deposit Account No. \_\_\_\_\_; or

☐ c. Payment by credit card Form PTO-2038 is attached

4. ☒ Any refund should be made by ☐ check or ☒ credit to Deposit Account No. 23/2825  
37 CFR 1.26(c). If payment is made by credit card, refund must be to credit card account.

5. ☒ A copy of the patent to be reexamined having a double column format on one side of a separate paper is enclosed 37 CFR 1.510(b)(4)

6. ☐ CD-ROM or CD-R in duplicate. Computer Program (Appendix) or large table

7. ☐ Nucleotide and/or Amino Acid Sequence Submission  
If applicable, all of the following are necessary

a. ☐ Computer Readable Form (CRF)

b. Specification Sequence Listing on:

I ☐ CD-ROM (2 copies) or CD-R (2 copies); or

II ☐ paper

c. ☐ Statements verifying identity of above copies

8. ☐ A copy of any disclaimer, certificate of correction or reexamination certificate issued in the patent is included.

9. ☒ Reexamination of claim(s) 1-20 is requested.

10. ☐ A copy of every patent or printed publication relied upon is submitted herewith including a listing thereof on Form PTO-1449

11. ☐ An English language translation of all necessary and pertinent non-English language patents and/or printed publications is included

[Page 1 of 2]

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS SEND TO: Assistant Commissioner for Patents Box Reexam, Washington, DC 20231.

03/20/03 DP



PTO/SB/57 (02-01)  
Approved for use through 01/31/2004 OMB 0851-0023  
U.S. Patent and Trademark Office, U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

12 ☒ The attached detailed request includes at least the following items:

- a. A statement identifying each substantial new question of patentability based on prior patents and printed publications. 37 CFR 1.510(b)(1)
- b. An identification of every claim for which reexamination is requested, and a detailed explanation of the pertinency and manner of applying the cited art to every claim for which reexamination is requested. 37 CFR 1.510(b)(2)

13 ☐ A proposed amendment is included (only where the patent owner is the requester) 37 CFR 1.510(e)

14 ☐ a. It is certified that a copy of this request (if filed by other than the patent owner) has been served in its entirety on the patent owner as provided in 37 CFR 1.33(c)  
The name and address of the party served and the date of service are:

\_\_\_\_\_


\_\_\_\_\_

\_\_\_\_\_

Date of Service: \_\_\_\_\_; or

☐ b. A duplicate copy is enclosed since service on patent owner was not possible.

15 ☒ Correspondence Address: Direct all communication about the reexamination to: \_\_\_\_\_

☒ Customer Number 23628 →    
OR Type Customer Number here

☐ Firm or Individual Name \_\_\_\_\_

Address (line 1) \_\_\_\_\_

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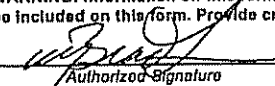
16 ☐ The patent is currently the subject of the following concurrent proceeding(s):

- ☐ a. Copending reissue Application No. \_\_\_\_\_
- ☐ b. Copending reexamination Control No. \_\_\_\_\_
- ☐ c. Copending interference No. \_\_\_\_\_
- ☐ d. Copending litigation styled: \_\_\_\_\_

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**WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.**

 M. Brad Lawrence, Reg. No. 47,210  
Authorized Signature

March 20, 2003 \_\_\_\_\_  
Date

☒ For Patent Owner Requester  
☐ For Third Party Requester

FORM PTO-1449/A and B (Modified)		APPLICATION NO.: 09/948,408	FILED DOCKET NO.: H00644-70004
INFORMATION DISCLOSURE STATEMENT BY APPLICANT		FILING DATE: September 6, 2001	CONFIRMATION NO.: 5531
		APPLICANT: de Hilster et al.	
		GROUP ART UNIT: 2171	
Sheet	1	of	1

## U.S. PATENT DOCUMENTS

Examiner's Initials#	Cite No.	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Class/Subclass	Date of Publication or of Issue of Cited Document mm-dd-yyyy
		Number	Kind Code			
<i>Am</i>	A1	5,164,899	A1	Soboika et al.	364/419	11-17-1992
<i>Am</i>	A2	5,832,497	A1	Taylor	707/104	11-03-1998
<i>Am</i>	A3	5,999,939	A1	de Hilster	707/102	12-07-1999

## FOREIGN PATENT DOCUMENTS

Examiner's Initials#	Cite No.	Foreign Patent Document			Name of Patentee or Applicant of Cited Document (not necessary)	Date of Publication of Cited Document MM-DD-YYYY	Translation (Y/N)
		Office/ Country	Number	Kind Code			
<i>Am</i>	B1	WO	95/24687	A1		09-14-1995	Y

## OTHER ART -- NON PATENT LITERATURE DOCUMENTS

Examiner's Initials#	Cite No.	Include name of the author (in CAPITAL LETTERS) (title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, relevant page(s), volume-issue number(s), publisher, city and/or country where published.	Translation (Y/N)
<i>Am</i>	C1	NOAH, William W. and Rollin V. WEEKS. "TRW: DESCRIPTION OF THE DEFT SYSTEM AS USED FOR MUC-5." pp. 237-248 1993	

EXAMINER <i>Am</i>	DATE CONSIDERED 4/21/03
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#EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered  
Include copy of this form with next communication to applicant.

\*a copy of this reference is not provided as it was previously cited by or submitted to the office in a prior application. \_\_\_\_\_, filed \_\_\_\_\_, now \_\_\_\_\_, and relied upon for  
an earlier filing date under 35 U.S.C. 120 (continuation, continuation-in-part, and divisional applications)

[NOTE - Must provide a copy of any patent, publication, other information listed, even if it was previously submitted to, or cited by, the U.S. Patent Office in an  
earlier application, unless the earlier application is identified by the IDS and is relied upon for an earlier filing date under 35 U.S.C. §120, and the copy was provided  
in the earlier application.]

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### Patent Assignment Abstract of Title

Total Assignments: 3

Application #: 09019948 Filing Dt: 02/06/1998 Patent #: (5999939) Issue Dt: 12/07/1999 #2  
PCT #: NONE Publication #: NONE Pub Dt:

Inventors: DAVID S DE HILSTER, ALAN G PORTER, JOHN REESE

Title: SYSTEM AND METHOD FOR DISPLAYING AND ENTERING INTERACTIVELY MODIFIED STREAM  
DATA INTO A STRUCTURED FORM

Assignment: 1

Reel/Frame: 008982/0224 Received: 02/27/1998 Recorded: 02/06/1998 Mailed: 04/18/1998 Pages: 2

Conveyance: ASSIGNMENT OF ASSIGNORS INTEREST (SEE DOCUMENT FOR DETAILS).

Assignors: DE HILSTER, DAVID SCOTT

Exec Dt: 01/28/1998

PORTER, ALAN GEORGE

Exec Dt: 01/28/1998

REESE, JOHN

Exec Dt: 01/27/1998

Assignee: INTERACTIVE SEARCH, INC.

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Assignment: 2

Reel/Frame: 011590/0977 Received: 03/23/2001 Recorded: 03/05/2001 Mailed: 05/24/2001 Pages: 19

Conveyance: SECURITY AGREEMENT

Assignor: INTERACTIVE SEARCH, INC.

Exec Dt: 01/18/2001

Assignee: DEVELOPMENT DIMENSIONS INTERNATIONAL, INC.

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Assignment: 3

Reel/Frame: 012691/0366 Received: 03/22/2002 Recorded: 03/18/2002 Mailed: 05/15/2002 Pages: 2

Conveyance: ASSIGNMENT OF ASSIGNORS INTEREST (SEE DOCUMENT FOR DETAILS).

Assignor: INTERACTIVE SEARCH, INC.

Exec Dt: 02/13/2002

Assignee: (BRASSRING LLC)

170 HIGH STREET

WALTHAM, MASSACHUSETTS 02454

Correspondent: WOLF, GREENFIELD & SACKS, PC

STEVEN J. HENRY

600 ATLANTIC AVE

FEDERAL RESERVE PLAZA

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Page 1 of 1



Commissioner for Patents  
Washington, DC 20231  
www.uspto.gov

REEXAM CONTROL NUMBER	FILING DATE	PATENT NUMBER
90/006,570	03/24/2003	5999939

# 3

CONFIRMATION NO. 1696

23628  
WOLF GREENFIELD & SACKS, PC  
FEDERAL RESERVE PLAZA  
600 ATLANTIC AVENUE  
BOSTON, MA 02210-2211

Date Mailed: 04/09/2003

## NOTICE OF REEXAMINATION REQUEST FILING DATE

(Patent Owner Requester)

Requester is hereby notified that the filing date of the request for reexamination is 03/24/2003, the date the required fee of \$2,520 was received (See CFR 1.510(d)).

A decision on the request for reexamination will be mailed within three months from the filing date of the request for reexamination (See 37 CFR 1.515(a)).

Pursuant to 37 CFR 1.33(c), future correspondence in this reexamination proceeding will be with the latest attorney or agent of the record in the patent file.

The paragraphs checked below are part of this communication:

- ☐ 1. The party receiving the courtesy copy is the latest attorney or agent of record in the patent file
- ☐ 2. The person named to receive the correspondence in this proceeding has not been made the latest attorney or agent of record in the patent file because:
  - ☐ A. Requester's claim of ownership of the patent is not verified by the record
  - ☐ B. The request papers are not signed with a real or apparent binding signature
  - ☐ C. The mere naming of a correspondence addressee does not result in that person being appointed as the latest attorney or agent of record in the patent file
- ☒ 3. Addressee is the latest attorney or agent of record in the patent file
- ☐ 4. Other \_\_\_\_\_

*M. A. Smith*  
Office of Patent Legal Administration  
Central Reexamination Unit (703) 308-9692

PART 2 - OFFICE COPY

Page 1 of 1



Commissioner for Patents  
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REEXAM CONTROL NUMBER	FILING DATE	PATENT NUMBER
90/006,570	03/24/2003	5999939

#4

23628  
WOLF GREENFIELD & SACKS, PC  
FEDERAL RESERVE PLAZA  
600 ATLANTIC AVENUE  
BOSTON, MA 02210-2211

CONFIRMATION NO. 1696  
REEXAM ASSIGNMENT NOTICE

Date Mailed: 04/09/2003

## NOTICE OF ASSIGNMENT OF REEXAMINATION REQUEST

The above-identified request for reexamination has been assigned to Art Unit 2171. All future correspondence to the proceeding should be identified by the control number listed above and directed to the assigned Art Unit.

A copy of this Notice is being sent to the latest attorney or agent of record in the patent file or to all owners of record. (See 37 CFR 1.33(c)). If the addressee is not, or does not represent, the current owner, he or she is required to forward all communications regarding this proceeding to the current owner(s). An attorney or agent receiving this communication who does not represent the current owner(s) may wish to seek to withdraw pursuant to 37 CFR 1.36 in order to avoid receiving future communications. If the address of the current owner(s) is unknown, this communication should be returned within the request to withdraw pursuant to Section 1.36.

*M. A. Switty*  
Office of Patent Legal Administration  
Central Reexamination Unit (703) 308-9692

PART 2 - OFFICE COPY



## UNITED STATES PATENT AND TRADEMARK OFFICE

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United States Patent and Trademark Office  
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P.O. Box 1418  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
96/006,370	01/24/2003	5999939	H00644 70004 US	1696

23628 7390 05/12/2003  
WOLF GREENFIELD & SACKS, PC  
FEDERAL RESERVE PLAZA  
600 ATLANTIC AVENUE  
BOSTON, MA 02210-2211

EXAMINER	
Safet Met Jahic	
ART UNIT	PAPER NUMBER
2171	5

DATE MAILED: 05/12/2003

Please find below and/or attached an Office communication concerning this application or proceeding

96006370.US.1203



UNITED STATES PATENT AND TRADEMARK OFFICE

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United States Patent and Trademark Office  
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MAY 12 2003

(THIRD PARTY REQUESTER'S CORRESPONDENCE ADDRESS)

**EX PARTE REEXAMINATION COMMUNICATION TRANSMITTAL FORM**

REEXAMINATION CONTROL NO. 90/006,570

PATENT NO. 5999939

ART UNIT 2171

Enclosed is a copy of the latest communication from the United States Patent and Trademark Office in the above identified *ex parte* reexamination proceeding (37 CFR 1.550(e)).

Where this copy is supplied after the reply by requester, 37 CFR 1.535, or the time for filing a reply has passed, no submission on behalf of the *ex parte* reexamination requester will be acknowledged or considered (37 CFR 1.550(e)).



MAY 12 2003

<b>Order Granting / Denying Request For Ex Parte Reexamination</b>	Control No.	Patent Under Reexamination	
	90/008,570	5999939	
	Examiner	Art Unit	
	Uyen T Lo	2171	

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

The request for *ex parte* reexamination filed 24 March 2003 has been considered and a determination has been made. An identification of the claims, the references relied upon, and the rationale supporting the determination are attached.

Attachments: a) ☐ PTO-892,      b) ☒ PTO-1449,      c) ☐ Other: \_\_\_\_\_

1 ☒ The request for *ex parte* reexamination is GRANTED

RESPONSE TIMES ARE SET AS FOLLOWS:

For Patent Owner's Statement (Optional): TWO MONTHS from the mailing date of this communication (37 CFR 1.530 (b)). EXTENSIONS OF TIME ARE GOVERNED BY 37 CFR 1.550(c).

For Requester's Reply (optional): TWO MONTHS from the date of service of any timely filed Patent Owner's Statement (37 CFR 1.535) NO EXTENSION OF THIS TIME PERIOD IS PERMITTED. If Patent Owner does not file a timely statement under 37 CFR 1.530(b), then no reply by requester is permitted.

2 ☐ The request for *ex parte* reexamination is DENIED.

This decision is not appealable (35 U.S.C. 303(c)). Requester may seek review by petition to the Commissioner under 37 CFR 1.181 within ONE MONTH from the mailing date of this communication (37 CFR 1.515(c)). EXTENSION OF TIME TO FILE SUCH A PETITION UNDER 37 CFR 1.181 ARE AVAILABLE ONLY BY PETITION TO SUSPEND OR WAIVE THE REGULATIONS UNDER 37 CFR 1.183.

In due course, a refund under 37 CFR 1.26 (c) will be made to requester:

a) ☐ by Treasury check or,

b) ☐ by credit to Deposit Account No. \_\_\_\_\_ or

c) ☐ by credit to a credit card account, unless otherwise notified (35 U.S.C. 303(c)).

*Ule*

cc:Requester / if third party requester )  
 U.S. Patent and Trademark Office  
 PTO-471 (Rev. 04-01)

Office Action in Ex Parte Reexamination

Part of Paper No. 5

Application/Control Number: 90/006,570  
Art Unit: 2171

Page 2

*Reexamination*

1. A substantial new question of patentability affecting claims 1-20 of US Patent No. 5,999,939 is raised by the request for reexamination.

2. All claims are subject to reexamination.

3. The US Patent No. 5,164,899, US Patent No. 5,832,497, PCT Publication 95/24687 and Noah and Weeks article "TRW: Description of the DEFT System as Used for MUC-5" raise a substantial new question of patentability as to all the claims of the 5,999,939 Patent in that their combination discloses all the claimed subject matter of US Patent No. 5,999,939. For example, the Noah and Weeks article discloses receiving a plurality of source data streams, detecting text patterns, assembling frames and editing by a user (see page 237, first paragraph, page 238, fifth paragraph, page 241, third paragraph, page 242, fifth paragraph). The PCT Publication shows receiving documents from multiple sources (see Figure 1) and discloses a seller's interface allowing the user to input data over the scanner and to review and correct text resulting from the character recognizer (see page 13, first paragraph). Thus, the combination of the Noah and Weeks article with the PCT Publication raises a substantial new question of patentability as to all the claims of the 5,999,939 Patent.

4. US Patent No 5,832,497, PCT Publication 95/24687 and Noah and Weeks article "TRW: Description of the DEFT System as Used for MUC-5" are not cumulative to the

Application/Control Number: 90/006,570  
 Art Unit: 2171

Page 3

prior art of record in the original file. Accordingly, a substantial new issue of patentability which was not previously addresses has been raised by the submission of these references.

5. The patent owner is reminded of the continuing responsibility under 37 CFR 1.565(a), to apprise the Office of any litigation activity, or other prior or concurrent proceeding, involving US Patent No. 5,999,939 throughout the course of this reexamination proceeding. See MPEP §§ 2207, 2282 and 2286.

6. Extensions of time under 37 CFR 1.136(a) will not be permitted in these proceedings because the provisions of 37 CFR 1.136 apply only to "an applicant" and not to parties in a reexamination proceeding. Additionally, 35 U.S.C. 305 requires that reexamination proceedings "will be conducted with special dispatch" (37 CFR 1.550(a)). Extension of time in reexamination proceedings are provided for in 37 CFR 1.550(c).

#### **Conclusion**

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Uyen T Le whose telephone number is 703-305-4134. The examiner can normally be reached on M-F 7:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Safet Metjahic can be reached on 703-308-1436. The fax phone numbers for the organization where this application or proceeding is assigned are 703-746-7239 for regular communications and 703-746-7238 for After Final communications.

90006570-051203

Application/Control Number: 90/006,570  
Art Unit: 2171

Page 4

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.



Uyen Le  
Patent Examiner  
May 9, 2003

9006570.0259006



## UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
 United States Patent and Trademark Office  
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 www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
90/006,570	03/24/2003	5999939	H00644.70004 US	1696

23628 7590 09/02/2003  
 WOLF GREENFIELD & SACKS, PC  
 FEDERAL RESERVE PLAZA  
 600 ATLANTIC AVENUE  
 BOSTON, MA 02210-2211

EXAMINER

Uyen Le

ART UNIT

PAPER NUMBER

2171

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DATE MAILED: 09/02/2003

Please find below and/or attached an Office communication concerning this application or proceeding

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United States Patent and Trademark Office  
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SEP - 2 2008

**EX PARTE REEXAMINATION COMMUNICATION TRANSMITTAL FORM**

REEXAMINATION CONTROL NO. 90/006,570

PATENT NO. 5999939

ART UNIT 2171

Enclosed is a copy of the latest communication from the United States Patent and Trademark Office in the above identified *ex parte* reexamination proceeding (37 CFR 1.550(e)).

Where this copy is supplied after the reply by requester, 37 CFR 1.535, or the time for filing a reply has passed, no submission on behalf of the *ex parte* reexamination requester will be acknowledged or considered (37 CFR 1.550(e)).

<b>Office Action in Ex Parte Reexamination</b>	Control No. 90/006,570	Patent Under Reexamination 5999939	
	Examiner Uyen T Le	Art Unit 2171	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

a ☐ Responsive to the communication(s) filed on \_\_\_\_\_. b ☐ This action is made FINAL  
c ☒ A statement under 37 CFR 1.530 has not been received from the patent owner

A shortened statutory period for response to this action is set to expire 2 month(s) from the mailing date of this letter. Failure to respond within the period for response will result in termination of the proceeding and issuance of an *ex parte* reexamination certificate in accordance with this action. 37 CFR 1.550(d). **EXTENSIONS OF TIME ARE GOVERNED BY 37 CFR 1.550(c).** If the period for response specified above is less than thirty (30) days, a response within the statutory minimum of thirty (30) days will be considered timely.

**Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:**

1 <input checked="" type="checkbox"/> Notice of References Cited by Examiner. PTO-892	3 <input type="checkbox"/> Interview Summary, PTO-474
2 <input type="checkbox"/> Information Disclosure Statement. PTO-1449	4 <input type="checkbox"/> _____

**Part II SUMMARY OF ACTION**

1a. ☒ Claims 1-20 are subject to reexamination  
1b. ☐ Claims \_\_\_\_\_ are not subject to reexamination.  
2 ☐ Claims \_\_\_\_\_ have been canceled in the present reexamination proceeding.  
3 ☐ Claims \_\_\_\_\_ are patentable and/or confirmed.  
4 ☒ Claims 1-20 are rejected  
5 ☐ Claims \_\_\_\_\_ are objected to.  
6 ☐ The drawings, filed on \_\_\_\_\_, are acceptable  
7 ☐ The proposed drawing correction, filed on \_\_\_\_\_, has been (7a) ☐ approved (7b) ☐ disapproved  
8 ☐ Acknowledgment is made of the priority claim under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some\* c) ☐ None of the certified copies have  
1 ☐ been received.  
2 ☐ not been received.  
3 ☐ been filed in Application No. \_\_\_\_\_  
4 ☐ been filed in reexamination Control No. \_\_\_\_\_  
5 ☐ been received by the International Bureau in PCT application No. \_\_\_\_\_  
\* See the attached detailed Office action for a list of the certified copies not received  
9 ☐ Since the proceeding appears to be in condition for issuance of an *ex parte* reexamination certificate except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.  
10 ☐ Other: \_\_\_\_\_

*Ule*

cc: Requester (if third party requester)  
U.S. Patent and Trademark Office  
PTOL-468 (Rev. 04-01)

Application/Control Number: 90/006,570  
 Art Unit: 2171

Page 2

***Reexamination***

1. In order to ensure full consideration of any amendments, affidavits or declarations, or other documents as evidence of patentability, such documents **must** be submitted in response to this Office action. Submissions after the next Office action, which is intended to be a final action, will be governed by the requirements of 37 CFR 1.116, which will be strictly enforced.

2. Extensions of time under 37 CFR 1.136(a) will not be permitted in these proceedings because the provisions of 37 CFR 1.136 apply only to "an applicant" and not to parties in a reexamination proceeding. Additionally, 35 U.S.C. 305 requires that reexamination proceedings "will be conducted with special dispatch" (37 CFR 1.550(a)). Extension of time in reexamination proceedings are provided for in 37 CFR 1.550(c).

3. The patent owner is reminded of the continuing responsibility under 37 CFR 1.565(a), to apprise the Office of any litigation activity, or other prior or concurrent proceeding, involving Patent No. 5,999,939 throughout the course of this reexamination proceeding. See MPEP §§ 2207, 2282 and 2286.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

90006570-0900203



Application/Control Number: 90/006,570  
 Art Unit: 2171

Page 3

Invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 2, 4-8, 10, 12-15, 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Noah and Weeks article "TRW: Description of the DEFT System as Used for MUC-5", further in view of PCT Publication 95/24687, provided by the applicant.

Regarding claim 1, Noah and Weeks disclose a method for facilitating the accurate transfer of information from each of a plurality of non uniformly formatted source data streams into a structured database including "supplying digital data... multiple discernible source data strings" when Noah and Weeks show the text analysis tool called Data Extraction from Text (DEFT), see the background at page 237. The claimed "processing said digital data...target data strings" reads on the fact that DEFT extracts elements from input data and normalizes into a value for storage for example normalizing "England" into "United Kingdom" (see page 241, 3rd paragraph). The claimed "displaying a structured form...data strings inserted within" reads on the fact that DEFT simultaneously displays messages and the frame derived from them, providing highlights that show where slot values were extracted (see page 242, 5<sup>th</sup> paragraph). The claimed "enabling each user to modify...from the user" merely reads on the fact that the originator of the data stream can modify or accept the extracted data. Although Noah and Weeks do not specifically show that feature, Noah and Week clearly teach that DEFT was developed under the assumption that a user would always be in the loop (see page 242, 5<sup>th</sup> paragraph). Noah and Weeks do not specifically show that the user in the loop is the originator of the data stream from which target data strings

9006570-090203

Application/Control Number: 90/006,570  
 Art Unit: 2171

Page 4

are extracted. However, the PCT Publication clearly shows that it is well known in the art to allow a user to input data over a scanner and to review and correct text resulting from the character recognizer (see page 13, first paragraph). Therefore, it would have been obvious to one of ordinary skill in the art to make the user in the loop of Noah and Weeks the originator of the data stream from which target data strings are extracted in order to allow the originator of the data stream to control data extraction and to correct text resulting from the data extraction process.

Regarding claim 2, the claimed limitations have been noted as per claim 1 above.

Furthermore, the PCT Publication clearly shows that the supplying and displaying steps use a remote communication interface (see local area network and wide area network in Figure 1).

Regarding claim 4, Noah and Weeks disclose displaying said source data stream and enabling the user to copy selected portions of said source data stream into selected fields of said form when Noah and Weeks show that DEFT supports simultaneous display of messages and the framed derived from them and that users fill slots omitted by DEFT (see [page 242, 5<sup>th</sup> paragraph]).

Regarding claim 5, clearly the target strings, for example United Kingdom, are essentially equivalent to the extracted source data strings, for example England (see page 241, 3<sup>rd</sup> paragraph).

Regarding claim 6, the claimed supplemental strings read on the extracted frames from incoming messages shown in Noah and Weeks. Therefore, as

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Application/Control Number: 90/006,570  
Art Unit: 2171

Page 5

supplemental strings are supplied, the displayed structure has to form additionally displays fields having said supplemental data strings inserted within as claimed.

Claim 7 corresponds to a system for performing the method of claim 1, thus is rejected for the same reasons stated in claims 7, 8, 10, 12, 13, 14 above.

Claim 8 corresponds to a system for claim 2, thus is rejected for the same reasons stated in claim 2 above.

Regarding claim 10, although Noah and Weeks and the PCT Publication do not specifically show a means to return said form via a remote communication interface, it would have been obvious to one of ordinary skill in the art to include such a means in order to accommodate remote users.

Claim 15 merely differs from claim 7 by reciting components instead of "means" for performing the method of claim 1, thus is rejected for the same reasons stated in claim 7 above.

Claim 12, 13, 14 and 17, 19, 20 correspond respectively to a system for performing the method of claims 4, 5, 6, thus are rejected for the same reasons stated in claims 4, 5, 6 above.

Regarding claim 18, the system of Noah and Weeks as modified by the PCT Publication clearly returns said source data stream to its corresponding user since the system supports simultaneous display of messages and the framed derived from them (see Noah and Weeks, page 242, 5<sup>th</sup> paragraph).

Application/Control Number: 90/006,570  
 Art Unit: 2171

Page 6

5. Claims 3, 9, 11, 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Noah and Weeks article "TRW: Description of the DEFT System as Used for MUC-5", in view of PCT Publication 95/24687, provided by the applicant, further in view of Stein et al (US 6,246,996).

Regarding claims 3, 9, 11, 16, although Noah and Weeks and the PCT Publication do not disclose that the remote communication interface uses the Internet, it is well known in the art to use the Internet for facilitating transactions between parties as shown by Stein (see the abstract). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include using the Internet while implementing the method taught by Noah and Weeks and the PCT Publication in order to facilitate transactions between parties.

#### **Conclusion**

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Uyen T Le whose telephone number is 703-305-4134. The examiner can normally be reached on M-F 7:00-5:30.

7. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Safet Metjahic can be reached on 703-308-1436. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

90006570-000203

Application/Control Number: 90/006,570  
Art Unit: 2171

Page 7

8. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.



Uyen Le  
Primary Patent Examiner  
AU 2171

29 August 2003

00005570.000203

<b>Notice of References Cited</b>	Application/Control No. 00/008,570	Applicant(s)/Patent Under Reexamination 5898839	
	Examiner Uyan T Lo	Art Unit 2171	Page 1 of 1

## U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
	A	US-6,246,898	06-2001	Stein et al.	705/26
	B	US-			
	C	US-			
	D	US-			
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

## FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
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## NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
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	W	
	X	

\*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)  
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.



Docket No.: H00644-70004 US

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: de Hilster et al.  
Serial No: 90/006,570 (Reexamination of U.S. Patent No. 5,999,939)  
Confirmation No: 1696  
Filed: March 24, 2003  
For: SYSTEM AND METHOD FOR DISPLAYING AND  
ENTERING INTERACTIVELY MODIFIED STREAM  
DATA INTO A STRUCTURED FORM

Examiner: Uyen Le  
Art Unit: 2171

CERTIFICATE OF MAILING UNDER 37 C.F.R. §1.8(n)

The undersigned hereby certifies that this document is being placed in the United States mail with first-class postage attached, addressed to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on the 3<sup>rd</sup> day of November, 2003.

*Estimote Chadeau*

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

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Technology Center 2100

RESPONSE UNDER 37 CFR §1.111

Sir:

REMARKS

In response to the Office Action mailed September 2, 2003 in the above-identified application, reconsideration is respectfully requested.

Claims 1-20 are pending in this application, with claims 1, 7, and 15 being independent claims. No amendments have been made to the claims, as that is believed to be unnecessary for the reasons set forth below.

Notification Under 37 CFR §1.565(a)

Paragraph 3 of the Office Action reminded the patent owner of the continuing responsibility under 37 CFR §1.565(a) to apprise the U.S. Patent and Trademark Office of any litigation activity, or other prior or concurrent proceeding, involving U.S. Patent No. 5,999,939 throughout the course of this reexamination proceeding. In compliance with this responsibility, the undersigned hereby informs the U.S. Patent and Trademark Office that a Complaint was filed

Serial No.: 90/006,570

- 2 -

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in the United States District Court For the District of Massachusetts on July 31, 2000 involving U.S. Patent No. 5,999,939, Civil Action No. 00CV11525JLT. A copy of this Complaint is attached hereto along with a copy of an updated docket for this matter. As indicated at page 2 of the updated docket, Civil Action No. 00CV11525JLT was voluntarily dismissed without prejudice on May 14, 2002.

Rejections Under 35 USC §103(a)

In Paragraph 4 of the Office Action, claims 1, 2, 4-8, 10, 12-15, and 17-20 were rejected. The Office Action states that the claims are unpatentable under 35 USC §103(a) as obvious based on the Noah and Weeks article entitled, "TRW: Description of the DEFT System as Used for MUC-5" (hereinafter "the Noah and Weeks article"), in view of PCT Publication 95/24687 (hereinafter "the PCT publication"). Claims 3, 9, 11, and 16 were rejected under 35 USC §103(a) as being unpatentable over the combination of the Noah and Weeks article and the PCT Publication further in view of U.S. Patent No. 6,246,996 to Stein et al (hereinafter "Stein"). These rejections are respectfully traversed.

The asserted combination fails to disclose, teach, or suggest the combination of limitations recited in each of independent claims 1, 7 and 15. As acknowledged in the Office Action, although the Noah and Weeks article discloses a text analysis tool in which lexicon entries (e.g., target data strings) that are extracted from a source data stream may be edited by a "user," that "user" *is not the originator of the data stream from which those entries (e.g., target data strings) are extracted*. In fact, that "user" is a person running the DEFT software who is presumed to be knowledgeable in DEFT's lexicon and frame routing rules, as well as numerous other aspects of the DEFT software – the Noah and Weeks article describes a system unsuitable for presentation of extracted text to the author of the text. As noted in the Office Action, each of claims 1-20 requires that the originator of the data stream be allowed to edit the extracted text.

To correct this deficit in the Noah and Weeks article, the Office Action cites the PCT publication. The PCT publication discloses, however, a Seller's Interface 300 that permits a user to correct *character recognition errors in documents scanned in by the user*. This ability is limited to the scanned-in documents, *and does not extend to extracted data*. Indeed, in the PCT publication, once the scanned-in document is corrected by the user, it is simply associated with product information pertaining to the user, but no data is extracted therefrom.



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Thus, the 103 rejections should be withdrawn for three reasons.

First, not one of the cited references discloses presenting *extracted data* to the *originator* of the document for editing. The Noah and Weeks article teaches presenting extracted data to system operators (who are presumably trained for the system and, the types of data to be extracted and the range of acceptable results) – not the originators of the document. The PCT publication refers only to allowing users to *correct only OCR scans of a text document to fix characters and words that are misread*. Since no reference discloses the missing element of allowing an originator to edit extracted data, no combination of the references can render the claims obvious. See Carl Zeiss Stiftung v. Renishaw PCL, 945 F.2d 1173 (Fed Cir. 1991) (If a claim limitation is not suggested by either of the references, then even if the combination of references were proper, the claim would not be obvious).

Second, a combination of Noah and Weeks with the PCT publication would manifestly lead to a system different than that described in the present claims. If these two references are combined, the originator of a document would scan it in and perform corrections on any OCR errors. The result is a text file *just like what is submitted to the Noah and Weeks system – an electronic document*. Were Noah and Weeks combined with the PCT publication, therefore, the originator would scan, correct and submit the electronic document to the Noah and Weeks DEFT system (just as Noah and Weeks contemplates) -- that system would then extract data and present it to a *DEFT operator* for review. Again, no combination of the Noah and Weeks article and the PCT publication would call for the *extracted data* to be provided to the originator of the document.

Third, the combination is inconsistent with the teachings of the Noah and Weeks article and, as a result, there is no motivation to combine the two references. In the Noah and Weeks article, extracted data is presented to a sophisticated operator who is a skilled programmer and trained in text analysis and use of the software. The Noah and Weeks article cannot be combined with the PCT publication – where members of the public are asked to correct OCR errors (the equivalent of correcting typos) – without ignoring the teaching of Noah and Weeks that the person editing extracted data is highly skilled and trained to use the system. To do so would be legal error. See Bausch & Lomb, Inc. v. Barnes-Hind/Hydrocurve, Inc., 796 F.2d 443, 448 (Fed. Cir. 1986) (impermissible “to pick and choose from any one reference only so much of it as will support a given position to the exclusion of other parts....”).

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Because Stein cannot cure these deficiencies (and the Office Action does not attempt to use Stein for this purpose), each of claims 1-20 patentably distinguishes over the Noah and Weeks article, the PCT publication, and Stein, alone or in combination.

#### 1. *The Disclosure of the Noah and Weeks Article*

The Noah and Weeks article is directed to a text analysis tool called DEFT (Data Extraction From Text) that is capable of processing large volumes of text at very high speeds, identifying patterns which serve as indicators for the presence of relevant objects, relationships, or concepts in the data. These indicators are processed by a series of system-supplied utilities or custom-written functions which refine the data and re-formulate it into frames which can be presented to a user for review, editing, and submission to a downstream application or database. (Page 237, paragraph 1.)

The DEFT system may receive documents from multiple sources (i.e., it is intended to be embedded in a message handling system) through a "message queue." The text typically processed by DEFT included government cables, wire service input, native wire services, an existing full-text database, CD-ROM, and so on. (Page 238, paragraph 4.)

DEFT uses patterns to locate data of interest in text, and these patterns are contained in DEFT's lexicons. (Page 240, paragraph 2.) During execution, DEFT creates a "tag file," which is a list of textual patterns identified by DEFT in the text or data created by an extraction function. (Page 240, top two lines.) The data elements in the tag file are constructed into "frames." When a pattern is found in the text and that gives rise to a slot value of a type defined for a given frame class, the slot is automatically mapped to any frame whose scope encompasses the location of the pattern. Thus, if names of corporations occur within a two sentence range of a frame defined by a pattern of words indicative of a joint venture, a slot of the frame for the names of corporations would be filled by the instances of the names of the corporations occurring within that two sentence range. (Page 241, paragraphs 4 and 5.)

According to the Noah and Weeks article, and as noted in the Office Action, the DEFT system "was developed under the assumption that a user would always be in the loop; it was not intended to run autonomously." (Page 242, paragraph 5.) This involvement of the user is particularly "important" for frame review, and for this reason, DEFT "supports the simultaneous display of messages and the frames derived from them, providing highlights to show where slot values were extracted. Menus of valid values drawn from the lexicons assist the user in filling slots that were omitted by DEFT." (Page 242, paragraph 5.)

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The Noah and Weeks article makes it clear that the "user" is a person running the DEFT software and is expected to be knowledgeable in DEFT's lexicon and frame routing rules, as well as numerous other aspects of the DEFT software. (Page 242, paragraphs 2-5.) In particular, the "user" is a person knowledgeable in "different computing environments and problem domains," "external specification files that govern the interface with the surrounding message handling system, the output data model, FDF [Fast Data Finder -a pattern matching facility] configuration, and other "housekeeping" functions," and "lexicons and the frame routing rules" of the system. (Page 242, paragraphs 2 and 3.) Thus, the "user" described in the Noah and Weeks article is very clearly not the source of the original document, as the original document is obtained from a "messaging system like TRW's ELCSS or KOALA that receives government cables, wire service input, etc." (Page 238, paragraph 4.)

## 2. The Disclosure of the PCT Publication

The PCT publication describes a system, which, in its broadest description, is for brokering transactions between sellers and buyers of goods and services, although the example provided in the patent relates to hiring personnel. (Page 1, lines 5-11.) The "seller" in this example is a job candidate, and the "buyer" is a potential employer. The system includes a seller's interface that enables sellers to interactively enter information including multimedia information, into the database. (Page 1, lines 21-29.)

The PCT publication describes an interactive process through which information about the candidate (seller) may be placed into a database. The candidate (seller) is interviewed by the Seller Interface 300 to collect information for a product profile, such as the position the seller seeks, desired salary and geography, and experience. In addition to this information, free-form text such as a work sample, still images such as a resume, or multimedia information may be incorporated into the seller's profile in the database. (Page 5, lines 16-24.)

With respect to resumes, the PCT publication describes that, with a scanner, the Seller's Interface 300 "can accept scanned-in documents, for instance work samples or a resume." (Page 13, lines 1-3.) The Seller's Interface may optionally run the document through a "character recognizer (step 376) to produce free-form text," and selected keywords may also be identified for use in retrieval. (Page 13, lines 3-7.) To correct character recognition errors, "the seller's interface would present the resulting text to the seller for review and correction (step 378)." (Page 13, lines 7-10.)

As can be appreciated by reviewing the flowchart of the seller's activities in Fig. 3b, the Seller's Interface 300 does not extract any data from the documents that are scanned-in at

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step 376, nor does the Seller's Interface permit correction of extracted data, as correction is limited to the scanned-in document itself. (See Fig. 3b, steps 374-378.) Further, the operation of the Buyer's Interface 500 makes it clear that the documents scanned in at step 376 are stored in association with a particular seller (product), and that no data is extracted therefrom. (See page 17, lines 10-18 and also page 6, line 1- page 7, line 3 describing that additional information, such as a resume or video or audio clips are not stored in the Product Table 202.) Accordingly, although the PCT publication discloses a system in which a seller can scan in a resume and correct or modify the scanned-in data that has been interpreted by a character recognizer, the PCT publication does not disclose or suggest extracting data from that scanned-in data, and thus it clearly cannot disclose or suggest enabling the originator of that scanned-in data to modify the extracted data.

### 3. *The Office Action Fails to Set Forth a Prima Facie Case of Obviousness*

As noted in the MPEP, to establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. (MPEP Section 2143, Rev. 1, Feb 2003.) The rejection of claims 1-20 fails to meet at least two of these criteria.

#### A. The Combination of the Noah and Weeks Article and the PCT Publication is Improper

The Noah and Weeks article and the PCT publication fail to provide any suggestion or motivation to combine their teachings in the manner asserted by the Office Action, as the "user" in each is an entirely different person. In the Noah and Weeks article, the "user" that is provided with an ability to modify data extracted by the DEFT system is a person operating the DEFT system, and not the originator of the data stream (e.g., the author of the article provided by message handling system, or even the message handling system itself).

This "user" is presumed to be knowledgeable in DEFT's lexicon and frame routing rules, as well as numerous other aspects of the DEFT software, such as external specification files that govern the interface with the surrounding message handling system, the output data model, FDF configuration, and other "housekeeping" functions. (See page 242, paragraphs 2 and 3.)

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By contrast, in the PCT publication, the "user" that is permitted to correct character recognition errors in scanned-in documents is the "seller" or "candidate." (Page 5, lines 16-17 )

Because the "user" referenced in the Noah and Weeks article and the PCT publication are distinctly different persons (e.g., a skilled computer programmer with a knowledge of text analysis versus a job (potentially any job) seeker), the assertion that one of ordinary skill in the art would have been motivated "to make the user in the loop of Noah and Weeks the originator of the data stream from which target data strings are extracted in order to allow the originator of the data stream to control data extraction and to correct text resulting from the data extraction process" lacks any support in the references.

Further, the assertion that making "the user in the loop of Noah and Weeks the originator of the data stream from which target data strings are extracted in order to allow the originator of the data stream to control data extraction and to correct text resulting from the data extraction process" makes no logical sense given the clear teachings of the references.

The "originator" of the data stream in the DEFT system of Noah and Weeks is the author of the article or document picked up by the government cable or wire service. To assert that it would have been obvious make this author the "user" of the DEFT system to control data extraction and to correct text ignores the clear teaching of the Noah and Weeks article. Indeed, even if the messaging system of Noah and Weeks were viewed as the "originator" of the data stream, this assertion is similarly without merit.

Nor do the references provide any suggestion or motivation to combine their teachings. The reason for involving the "user" in the processes described in the Noah and Weeks article is distinctly different from that of the PCT publication. In the Noah and Weeks article, the "user" is involved so that they may view what data is extracted in a document and from where, and fill in omitted data or superfluous delete data. (Page 242, paragraph 5.) That is, the user is included to perform the job of assuring that the extraction meets technical requirements for the system.

By contrast, in the PCT publication, the "user" is simply permitted to correct errors resulting from the character recognition process, i.e., to verify that the scanned-in document matches the original. There is no need to verify whether a scanned-in document matches the original in the DEFT system, as the DEFT system operates on data received in electronic form from a message service. Accordingly, because there is no suggestion or motivation in the Noah

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and Weeks article and the PCT publication to combine their teachings, the rejection of claims 1-20 over this combination of references is improper and should be withdrawn.

In short, the combination of Noah and Weeks with the PCT publication is improper because it is inconsistent with the teaching of the primary reference. The Noah and Weeks system allows a sophisticated operator trained in use of the software and text analysis to check and edit extracted data. To hand this function over to an untrained, unskilled, inexperienced consumer, standing at a kiosk in a mall, would be inconceivable in the context of the Noah and Weeks system. Without improper use of hindsight, one of ordinary skill in the art would never combine these two references

B. The Asserted Combination Fails to Teach or Suggest All the Claim Limitations

The combination of the Noah and Weeks article and the PCT publication fails to teach or suggest all the claim limitations recited in each independent claim. Specifically, neither reference alone or in combination teaches or suggests enabling a document originator to modify (claim 7) or modify and/or accept (claim 1) target data strings inserted within a displayed form corresponding to a source data stream originating from the user as recited in either of independent claims 1 and 7, or data entry apparatus for enabling each user to alter fields (having target data strings inserted therein) of a form corresponding to a source data stream originating from the user before accepting the form as recited in claim 15.

Although the Noah and Weeks article discloses a text analysis tool in which lexicon entries (e.g., target data strings) that are extracted from a source data stream may be edited by a user, that user is not the originator of the data stream from which those entries (e.g., target data strings) are extracted, as acknowledged in the Office Action.

The PCT publication discloses a Seller's Interface 300 that permits a user to correct character recognition errors in documents scanned in by the user. But, this ability is limited to the scanned-in documents and cannot extend to extracted data, as indeed no data is even extracted from the scanned-in document. This reference also does not disclose the missing limitation.

Stein does not cure this deficiency (and the Office Action does not suggest otherwise). Since no reference includes this limitation, no combination of them could render the claim obvious. See Carl Zeiss Stiftung v. Renishaw PCL, 945 F.2d 1173 (Fed Cir. 1991) (If a claim limitation is not suggested by either of the references, then even if the combination of references

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were proper, the claim would not be obvious). Each of independent claims 1, 7, and 15 therefore patentably distinguishes over the Noah and Weeks article, the PCT publication, and Stein, alone or in combination.

Claims 2-6, 8-14, and 16-20 depend either directly or indirectly from one of claims 1, 7, and 15, and patentably distinguish over the combination of the Noah and Weeks article, the PCT publication, and Stein for at least the same reasons. Further, many of these claims recite additional limitations that further patentably distinguish over the asserted combination of references.

For example, each of claims 2, 3, 8, 9, 10, 11, and 16 depend either directly or indirectly from one of independent claims 1, 7 and 15 and patentably distinguishes over the asserted combination of references for reasons in addition to the independent claim from which they depend.

Claim 2 depends from claim 1 and further recites that said supplying and displaying steps use a remote communication interface. This further limitation is not taught or suggested by the Noah and Weeks article or the PCT publication, alone or in combination. For both, the system does not extract (or even OCR) data and then communicate that data using a remote interface (claim 2) or using the internet (claim 3) for the purpose of displaying it to a user; rather, for both, the display is done at the same location as the extraction (or OCRing) of data.

In the Noah and Weeks article, the step of displaying a structured form that includes extracted data is performed at a location (i.e., the central facility wherein a skilled programmer trained in text analysis and the use of the DEFT software reviews data extracted from the source data stream) that is the same as where the data was extracted.—No remote communication (claim 2) or use of the internet (claim 3) would be involved. Similarly, although the PCT publication describes that information from a user may be collected by the Seller's Interface 300 at a workstation or automated kiosk (see page 11, lines 10-28), the PCT publication does not display any extracted data to the user, it simply permits the user to correct any errors resulting from the OCR process used to supply source data. Further, the data generated by the OCR process is displayed to the user at the same location where it is generated, no remote communication (claim 2) or use of the internet (claim 3) is involved.

Accordingly, because the combination of references fails to disclose or suggest that the steps of supplying and displaying are performed using a remote communication interface (claim

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2), or using the internet (claim 3), these claims further patentably distinguish over the asserted combination of the Noah and Weeks article, the PCT publication, and Stein.

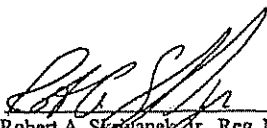
Claims 8, 9, 10, 11, and 16 further patentably distinguish over the asserted combination of references for reasons similar to those discussed above with respect to claims 2 and 3.

**CONCLUSION**

In view of the foregoing remarks, confirmation of the patentability of all claims of the '939 patent over the cited references is respectfully requested. If the Examiner believes, after this amendment, that the application is not in condition for allowance, the Examiner is requested to call the Applicant's attorney at the telephone number listed below.

If this response is not considered timely filed and if a request for an extension of time is otherwise absent, Applicant hereby requests any necessary extension of time. If there is a fee occasioned by this response, including an extension fee that is not covered by an enclosed check, please charge any deficiency to Deposit Account No. 50/2762.

Respectfully submitted,  
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Docket No.: H00644.70004.US  
Date: November 3, 2003





Docket No.: H00644-70004 US

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: de Hilster et al.  
Serial No: 90/006,570 (Reexamination of U.S. Patent No. 5,999,939)  
Confirmation No: 1696  
Filed: March 24, 2003  
For: SYSTEM AND METHOD FOR DISPLAYING AND  
ENTERING INTERACTIVELY MODIFIED STREAM  
DATA INTO A STRUCTURED FORM  
Examiner: Uyen Le  
Art Unit: 2171

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The undersigned hereby certifies that this document is being placed in the United States mail with first-class postage attached, addressed to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on the 3<sup>rd</sup> day of November, 2003

*Patricia A. Madigan*

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

Transmitted herewith are the following documents:

- [X] Response Under 37 CFR §1.111
- [X] Copy of Complaint, Civil Action No. 00cv11525 Involving U.S. Patent No. 5,999,939
- [X] CourtLink Online Docket Sheet for Civil Action No. 00cv11525, 2 pages
- [X] Return Receipt Postcard

If the enclosed papers are considered incomplete, the Mail Room and/or the Application Branch is respectfully requested to contact the undersigned at (617) 395-7000.

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Docket No.: H00644.70004 US  
Date: November 3, 2003

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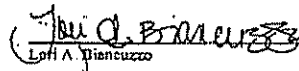
Attorney Docket No.: H00644.70004.US

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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INTERACTIVELY MODIFIED STREAM DATA INTO A  
STRUCTURED FORM  
Examiner: Uyen T. Le  
Art Unit: 2171

CERTIFICATE OF FACSIMILE TRANSMISSION UNDER 37 C.F.R. 51.8(a)

The undersigned hereby certifies that this document is being transmitted via facsimile to the attention of Examiner Uyen T. Le, at fax number 703.872.9306, at the United States Patent and Trademark Office on the 20<sup>th</sup> day of January, 2004.

  
Lofi A. Biancuzzo

Commissioner for Patents  
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Alexandria, VA 22313-1450

REQUEST TO CHANGE ATTORNEY CORRESPONDENCE ADDRESS

Please change the attorney's correspondence address on the above-identified application as recorded in the Patent and Trademark Office Records:

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TO: Robert A. Skrivanek, Jr., Reg. No. 41,316  
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PAGE 05/05

Attorney Docket No. H00644.70004.US  
Serial No. 90/006,570

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to charge Deposit Account No. 50/2762.

Respectfully submitted,  
*de Hilster et al., Applicants*

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PAGE 02/05

Attorney Docket No.: H00644.70004 US

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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Examiner: Uyen T. Le  
Art Unit: 2171

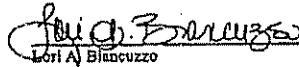
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Lori A. Blacuzzo

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

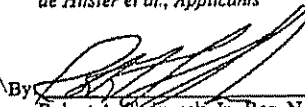
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Respectfully submitted,  
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Examiner: Uyen T. Lo  
Art Unit: 2171

CERTIFICATE OF FACSIMILE TRANSMISSION UNDER 37 C.F.R. 31.8(a)

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Lori A. Blancuzzo

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

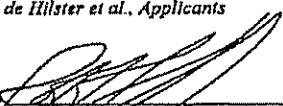
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☒ Request to Change Attorney Correspondence Address

No fee is enclosed. If a fee is necessary, the Commissioner is hereby authorized to charge Deposit Account No. 50/2762.

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de Hilster et al., Applicants

By   
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PAGE 01/05



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Date January 20, 2004

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**To** Examiner Uyen T. Le  
**Company** United States Patent and Trademark Office  
**Fax** 703.872.9306  
**From** Robert A. Skrivaneck, Jr.  
**Direct dial** 617-395-7014  
**Our File #** H00644-70004.US

**OFFICIAL****CERTIFICATE OF FACSIMILE TRANSMISSION 37 C.F.R. § 1.8(a)**

The undersigned hereby certifies that this document is being transmitted via facsimile to the attention of Examiner Uyen T. Le, FAX number 703.872.9306, at P.O. Box 1450, Alexandria, VA 22313-1450, in accordance with 37 C.F.R. § 1.6(d), on the 20<sup>th</sup> day of January, 2004.

*Robert A. Skrivaneck, Jr.*  
 Robert A. Skrivaneck, Jr.

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Notice of Intent to Issue Ex Parte Reexamination Certificate</b>	Control No.	
	90/008,570	
	Patent Under Reexamination	
	Examiner	Art Unit
	Uyen T. Le	2171

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1 ☒ Prosecution on the merits is (or remains) closed in this ex parte reexamination proceeding. This proceeding is subject to reopening at the initiative of the Office or upon petition. Cf. 37 CFR 1.313(a). A Certificate will be issued in view of

(a) ☒ Patent owner's communication(s) filed: 05 November 2003.

(b) ☐ Patent owner's late response filed: \_\_\_\_\_

(c) ☐ Patent owner's failure to file an appropriate response to the Office action mailed: \_\_\_\_\_

(d) ☐ Patent owner's failure to timely file an Appeal Brief (37 CFR 1.192).

(e) ☐ Other: \_\_\_\_\_

Status of Ex Parte Reexamination:

(f) Change in the Specification: ☐ Yes. ☒ No

(g) Change in the Drawing: ☐ Yes. ☒ No

(h) Status of the Claim(s):

(1) Patent claim(s) confirmed: 1-20.

(2) Patent claim(s) amended (including dependent on amended claim(s)): \_\_\_\_\_

(3) Patent claim(s) cancelled: \_\_\_\_\_

(4) Newly presented claim(s) patentable: \_\_\_\_\_

(5) Newly presented cancelled claims: \_\_\_\_\_

2 ☒ Note the attached statement of reasons for patentability and/or confirmation. Any comments considered necessary by patent owner regarding reasons for patentability and/or confirmation must be submitted promptly to avoid processing delays. Such submission(s) should be labeled: "Comments On Statement of Reasons for Patentability and/or Confirmation."

3 ☒ Note attached NOTICE OF REFERENCES CITED (PTO-892).

4 ☒ Note attached LIST OF REFERENCES CITED (PTO-1449).

5 ☒ The drawing correction request filed on \_\_\_\_\_ is: ☐ approved ☐ disapproved.

6 ☒ Acknowledgment is made of the priority claim under 35 U.S.C. § 119(a)-(d) or (f).

a) ☐ All b) ☐ Some\* c) ☐ None of the certified copies have

☐ been received.

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7 ☐ Note attached Examiner's Amendment

8 ☐ Note attached Interview Summary (PTO-474)

9 ☐ Other: \_\_\_\_\_

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## REEXAMINATION

### REASONS FOR PATENTABILITY / CONFIRMATION

Reexamination Control No. 90/006,570

Attachment to Paper No. 10.

Art Unit 2171.

AS A RESULT OF REEXAMINATION, IT HAS BEEN DETERMINED THAT:

Applicant's arguments have been fully considered and found persuasive.  
The patentability of claims 1-20 is confirmed for the reasons presented by the applicant in the response dated 6 November 2003 herein incorporated by reference.

Conferences:  
Salem Metahic

Frantz Gaby

PTOL-478 (Rev. 03-88)

UYEN LE  
PRIMARY EXAMINER

(Examiner's Signature)

TRW:  
DESCRIPTION OF THE DEFT SYSTEM AS USED FOR MUC-5

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### BACKGROUND

For the past three years, TRW has been developing a text analysis tool called DEFT--Data Extraction from Text. Based on the Fast Data Finder (FDF), DEFT processes large volumes of text at very high speeds, identifying patterns which serve as indicators for the presence of relevant objects, relationships, or concepts in the data. These indicators are processed by a series of system-supplied utilities or custom-written functions which refine the data and re-formulate it into frames which can be presented to a user for review, editing, and submission to a downstream application or database.

Superficially, DEFT resembles a Natural Language Understanding (NLU) system; however, there are key differences. DEFT entertains very limited goals in the processing of natural language input. Although DEFT processes unconstrained input, it is looking for textual entities which are tightly constrained and presented to the system as a list of expressions or in a powerful pattern specification language. It exploits expectations about how a small set of entities will be expressed to reduce the amount of computation required to locate those--and only those--entities. The broader question of the "meaning" of the text in the document is bypassed in favor of rapid, robust processing that can be readily moved from domain to domain. As long as the input for a particular domain is sufficiently predictable, data extraction with a satisfactory level of recall and precision for many applications can be achieved. We are currently installing three DEFT systems for a United States government agency; initial reviews have been highly favorable.

Our involvement in MUC-5 derives from a request by the government to turn DEFT to a COTS product, with the intent of having a fully-supported version of the system by the end of the year. An analysis of the broader commercial and government market for text extraction suggested that the scope of problems that DEFT should be able to address needed to be expanded; however, it was established that replication of the ongoing research and development work in the NLU community was an inappropriate role for our development group. Rather, we wanted DEFT to be able to integrate with systems already developed or in development for functionality which falls outside the narrow boundaries of DEFT's pattern-based capabilities. At the same time, DEFT's ability to express patterns needed to be extended from its current, highly effective means for defining "atomic" patterns to the definition of patterns in relationship to each other, permitting simple syntactic information to be added to DEFT's lexical knowledge. Thus, DEFT would have the potential to find entities not expressly defined

In a lexicon, improve its ability to correctly determine the relation between entities, and decrease the overgeneration that tends to be associated with approaches that rely exclusively on pattern matching.

A mechanism was selected for enhancing pattern specification which was felt to be compatible with the notion of integrating DEFT with third-party systems. As will be described in some detail, DEFT is intrinsically an engineering shell which is intended to facilitate such integration while making its rapid pattern-matching services available to the other system components. Unfortunately, the software implementing this concept was not available at the time of the final MUC-5 evaluation, the results of which therefore serve only to confirm our expectations that the recognition of "simple" (i.e. isolated) patterns is woefully insufficient for complex data extraction problems.

While we regret that the capabilities of the extended version of DEFT could not be demonstrated for MUC-5, we feel that the outcomes justify our belief that real-world message understanding problems necessitate an engineering solution that can pit a choice of technologies against the specific problem at hand-- different technologies being optimum for different tasks. We believe that DEFT's success in handling simple data extraction problems can be extended, and that DEFT is well-suited to a role as an integrator of text analysis capabilities. It is toward this end that we are focusing our on-going productization efforts.

## SYSTEM DESCRIPTION

It is convenient to envision DEFT as a pipeline, as shown in Figure 1. At the head is a standardized document interface to message handling systems. At the tail is a process which generates frames and distributes these to the appropriate destinations on the basis of content. In between is a series of text analysis "filters" which apply DEFT lexicons (pattern searches) against the text (using the FDF) and call specific extraction functions to process the textual fragments located by the lexicons. All processes are controlled by means of external configuration files and a "workbench" which contains tools for interacting with DEFT and the data DEFT extracts. We will describe each of these major components in turn.

*The Document Interface; Message Queuing.* It is assumed that DEFT will be embedded in an existing automated message handling (AMH) system. DEFT's interface with these systems is called Message Queuing (MQ). Text is typically disseminated to MQ (e.g. by a messaging system like TRW's ELCSS or KOALA that receives government cables, wire service input, etc.) on the basis of subject matter, source, structure, or other characteristic with salience for how the message's language will be analyzed. MQ can also accommodate documents loaded from other sources, such as native wire services, an existing full-text database, CD-ROM, OCR, and so on. Text is assumed to be in ASCII or extended ASCII. In the near future, DEFT will build on work currently underway to allow the FDF to accommodate Unicode for foreign character sets, such as Japanese. Structural features, such as document boundaries, sentence boundaries, paragraphs, tabularization, encoded tags (such as SGML), embedded non-textual media, etc. can be defined for a particular document class using DEFT specification files.

MQ utilizes a configuration file to assign a processing thread tailored to the problem domain to each category of document classified by the dissemination system or by whatever means (including manual) is used to route documents to DEFT. Documents

are associated with a processing thread by placing them in a particular MQ "in-basket" (a standard Unix directory). Each in-basket is polled periodically, using a set of criteria (time and number of messages since the last processing thread was initiated) defined in the configuration file.

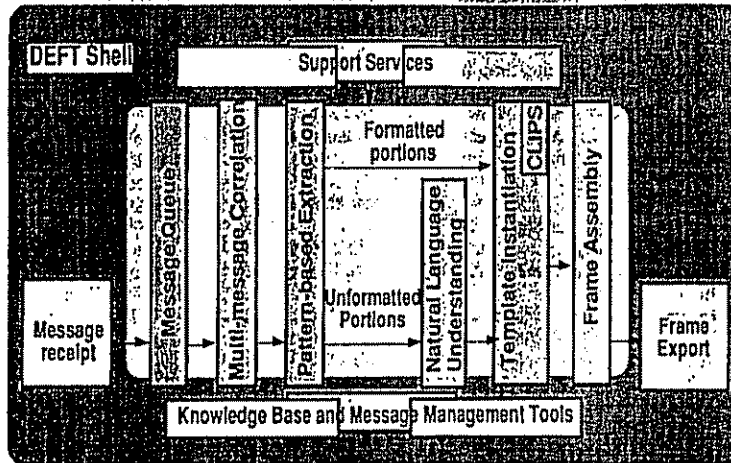


Figure 1: DEFT Functional Architecture

**Extracting Data: Text Analysis Filters.** When MQ assigns a document to a processing thread, it is subjected to a sequence of procedures which operate on the text to locate patterns of interest and use these patterns as a guide to extract the data required for a particular problem domain. This sequence of processes determines what is extracted and how it is extracted. The sequence is defined as an ordered list of "extraction phases" in a configuration file. This list can be changed at any time to substitute or add new extraction phases to refine a text processing thread. New threads can be modeled on existing ones, facilitating transitions to new problem areas.

Each extraction phase is an executable program. The behavior of a phase is dependent on the order in which it is called (i.e. its relationship to the phases that have been executed before it) and on parameters which are supplied in the configuration file. In this way, a generalized extraction phase can be configured for a specific analytic objective. DEFT has a library of extraction phases that perform the most elementary analytic processes; new phases are be written on a problem-specific basis. DEFT provides an application programming interface (API) in the form of a library of utilities which allows a custom extraction phase to interact with the data structure which is common to all extraction phases, and which is used to communicate between phases. This structure is the DEFT "Tag File."

The Tag File is a cumulative record of the processing performed by each extraction phase. Each phase receives the Tag File from the preceding phase, and passes it to

the next. A "tag" represents a textual pattern identified by DEFT in the text or data created by an extraction function.

Much of the power of DEFT comes from the ability to apply a mixture of extraction phases that is optimally suited for a given class of document and extraction problem. For example, one extraction phase might reason about the relative time of occurrence of events located in the text, basing its analysis on the occurrence of various forms of date/time indicators as well as the presence of such modifiers as "last week," or "three years ago." Another phase might construct corporate names on the basis of the occurrence of a known name or the presence of a designator (e.g. "Inc." or "S.A."). Yet another phase might act upon these names to reason about their potential relationship in a joint venture.

**Locating Data: DEFT Lexicons.** The patterns that DEFT uses to locate data of interest in the text are contained in DEFT's lexicons. Lexicons serve various purposes: to identify potential frames; to determine the "scope" of a frame in the text (i.e. the boundaries to be used to find data to fill the frame slots); to find the contents for a slot in a frame; to determine structural elements (e.g. sentences, paragraphs, header information), and to set the attributes of a text object (e.g. classification level).

Lexicons are of two types: list and pattern. The list lexicon associates a set of synonyms (or spelling variants) with a given object. It is useful when the complete set of strings associated with an object can be specified. The pattern lexicon is used when the textual variations associated with an object cannot be specified. For example, all possible monetary values cannot be conveniently enumerated, but a single pattern describing monetary values in terms of digits, punctuation, and denomination strings can be constructed.

Associated with lexicon entries are attributes, representing the semantics of the problem domain. An attribute is a characteristic of the object represented in the text by its synonym list or pattern. It might be the normalized form of a name or other data about an object which is useful to map into a frame, such as the country associated with a corporate name. In a list lexicon, these attributes are known explicitly when an entry is created; they are not inferred from the text. In a pattern lexicon, however, the attributes cannot be known in advance because it is not known what exact value will hit against the pattern. For this reason, attributes must be extracted for a pattern lexicon. Attribute extraction is handled by a C or C++ program referred to as an "extraction function." For example, given the location of a corporate designator, a function might reconstruct the corporate name.

The success of a data extraction system that relies on pattern matching and string finding depends on how exhaustively it can search for the variations expected in input language. DEFT has proved successful in its current applications in part because its lexicons can be extremely large thanks to the capabilities (in terms of both functionality and performance) of the FDF.

**Searching Text for Lexicon Entries:** The FDF uses the TRW-developed Fast Data Finder to rapidly locate instances of a potentially enormous set of patterns in the input text. The power of the FDF originates in two ways: the hardware architecture and the expressiveness of its Pattern Specification Language (PSL).

The current generation FDF-3, now a COMS product manufactured by Paracel, Inc., uses a massively parallel architecture to stream text past a search pattern at disk speeds (currently 3.5-million characters/second using a standard SCSI disk).



Searches are compiled into micro code for a proprietary chip set which can accommodate up to 3,600 simultaneous character searches or Boolean operations. Lexicons are broken into "pipelines" which fully fill the chip set; each pipeline is run against all of the text in the set of documents currently being processed. MQ batches messages as they come in so as to optimize the use of the chip--larger message sets are processed more efficiently than several smaller ones. The tradeoff between batching and "real-time" processing can be independently balanced in the MQ configuration file for each in-basket and processing thread.

Search patterns are specified in PSL. Because the PDF uses a streaming approach, PSL is not dependent on word boundaries. Extremely complex patterns can be expressed, which can include such features as error tolerance, sliding windows, multiple wildcard options, nested macros, character masking, ranging, and the usual Boolean operations. Features that support "fuzzy matching," like error tolerance, are extremely important for handling "noisy" input.

**Output Generation: Frame Assembly and Routing.** When the filters that comprise a processing sequence have executed, the Tag File is passed to the "Frame Assembly and Region Routing" (FARR) module. This program, which constitutes the "tail" of the DEFT pipeline, assembles the data elements generated during the analysis thread into frames based on an external definition file. This file specifies which slots are associated with which frames, how to transform a data value for display to the user (e.g. normalize "England" to "United Kingdom"), how to transform a value for storage in a downstream database (e.g. abbreviate "England" as "UK"), how to validate a data value, whether a data type can be multiply-occurring, and so on.

One issue that arises during frame assembly is when to associate a data value with an instance of the frame class for which it is defined. In DEFT, this operation is associated with "scoping." Scoping is the process of determining the extent in the text of a concept associated with a pattern. For example, if a pattern of words indicative of a joint venture is found, the scope of the "tie-up" frame might be taken to be the location of the pattern plus or minus two sentences. The unit of scoping (in this case, sentence) need not be a syntactic unit--it can be any pattern stored in a special type of lexicon used exclusively for determining frame scope. The unit of scoping and its extent (e.g., "plus or minus n") can be determined independently for each frame class.

When a pattern that gives rise to a slot value of a type defined for a given frame class is found in the text, the slot is automatically mapped by FARR to any frame whose scope encompasses the location of the pattern. Thus, if the name of a corporation were to occur within the two sentence range of the tie-up frame in our example, it would appear in that frame. Of course, this may not be accurate--DEFT has a tendency to overgenerate slots through bogus associations that arise because of this weak scoping mechanism.

Another issue that is encountered is overlapping frames. The "best available" resolution can be specified in the frame definition file. One alternative is simply to accept both frames, since they may be describing separate concepts. If the frames are of different classes, FARR supports the attribution of a priority to each class, and only the frame with the highest priority need be retained. If the frames are of the same class, FARR supports a "non-multiply occurring" attribute, which optionally suppresses all but one of the frames. Unfortunately, the action taken is generalized to all situations--the specifics of a given case cannot be taken into account. Thus, DEFT tends to either overgenerate or lose frames.

When a message's frames have been generated and ambiguities resolved (to the extent that DEFT can resolve them), the frames (and the message) are routed to a destination directory on the basis of their content. Routing instructions are defined in a rule base using a normalized conjunctive form of field-value pairs. It should be kept in mind that although DEFT's primary mission is extraction, not dissemination, the routing capability (since it is based on knowledge representation) provides a sensitive mechanism for determining the destination of a message and the structured representation of its contents.

**Controlling the System: DEFT Tools and Specification Management.** In order to make DEFT portable to different computing environments and problem domains, the definition of user-modifiable system characteristics has been exported to a set of external specification files. These files govern the interface with the surrounding message handling system, the output data model, PDF configuration, and other "housekeeping" functions. Specification files are maintained using any convenient text editor.

The most important system specifications from the standpoint of the end-user are the lexicons and the frame routing rules. To facilitate lexicon development and maintenance, a lexicon editor is bundled with DEFT that provides a graphic user interface (under X/Motif) for interactively defining lexicons and entering/editing lexicon entries. Lexicons can also be created/updated from databases or external machine-readable files (e.g. gazetteers, corporate name lists) using a batch load protocol.

Like the lexicon editor, the routing rule manager provides a GUI for maintaining routing rules. It uses a spreadsheet metaphor to minimize the user's exposure to the potentially complex Boolean logic that the rules can involve. Menus of valid values and conditions tests are automatically provided.

Another important DEFT tool is frame review. DEFT was developed under the assumption that a user would always be in the loop; it was not intended to run autonomously. This package therefore supports simultaneous display of messages and the frames derived from them, providing highlights that show where slot values were extracted. Menus of valid values drawn from the lexicons assist the user in filling slots that were omitted by DEFT. Features for selectively deleting superfluous slots and frames are particularly important, since DEFT (like other pattern-based approaches to text analysis) tends to overgenerate data. A mechanism is also provided to facilitate manually linking frames of different classes into higher-level logical aggregations, since DEFT was not originally designed with an automated linking capability. Clearly, these two design assumptions—human interaction and manual frame linking—had an impact on working with the MUC-5 data.

#### **DEFT as an Engineering Shell**

This description of the DEFT system has emphasized that analysis threads are composed of independent components which communicate through a common data structure using a library of utilities that constitute an API. It is our contention that



DEFT's strengths are:

- A powerful pattern searching capability, which we are extending.
- The ability to integrate COIS, COIS, and custom-written programs within the DEFT architecture.

We believe that there will probably not be a single text analysis or NLI system that meets the requirements of all conceivable applications. There will always be a tradeoff between such factors as speed, depth of analysis, breadth of coverage, portability, robustness, and analysis methodology that will favor one technology over another for a particular problem. The real question is not "What is the best system?", but "What is the best system at this moment?"

Our current development work on DEFT is chiefly targeted at its usefulness as an integration tool. DEFT provides a high-speed pattern searching capability which can successfully extract data from structured or tightly constrained textual inputs, while providing pre-processing services (e.g., tagging words with part of speech or semantic attributes) for third-party software which performs more extensive natural language processing for unconstrained textual inputs. This approach should be especially efficient for applications in which messages are mixed (formatted and unformatted), text analysis tasks are varied in complexity, and throughput is a major consideration.

#### Inherent Limitations in DEFT's Pattern-Matching Approach

Because DEFT was not originally intended for problems of the scope of MUC-5, its simplistic approach posed some major problems. Among the most fundamental were:

**Syntactical Patterns.** DEFT has very powerful mechanisms for specifying "atomic" patterns-- a corporate name, a place name, a set of words that indicate a joint venture, etc. DEFT was not designed to have the capability of expressing relationships among the patterns in its lexicons and providing for the assignment of values defined with respect to these patterns to variables. These are essential capabilities for the implementation of the most rudimentary semantic grammar. For example, DEFT had no way to express: "Look for a corporate name followed by a joint venture formation phrase and take the following corporate name as the partner in the joint venture."

**Frame Scoping.** DEFT was designed to interpret the scope of a frame as a function of proximity to the "hit location" of the pattern that resulted in a frame's instantiation. The boundaries are determined by a pre-defined number of repetitions of a pattern contained in a scope lexicon. An upper ceiling determined by a fixed number of characters can also be specified. In case the scoping pattern is not detected a "reasonable" distance from the site of the hit. All occurrences of slots defined for a frame within these boundaries are automatically included in the frame when it is assembled by FARR.

For highly formatted text (e.g., messages in Military Text Format), such a mechanism is adequate. For free-text, it is not. In the MUC-5 evaluation, DEFT failed to report valid objects that it located (notably entities) because they were not within the scope of a tie-up, as DEFT measured scope.

*Frame Linking.* The original DEFT design assumed that a human operator would perform this task. Automated linking is obviously needed for "unattended" operation and is clearly useful even if there is a human-in-the-loop.

## Solutions

Current internal research and development work aimed at resolving each of these problems for the eventual DEFT product adheres to the constraint that architectural extensions must be philosophically compatible with the pattern-based approach, while avoiding significant overlap with NLU (which we prefer to view as an integratable component in a complex system). As noted earlier, key software being developed under IR&D was not available for the MUC-5 final evaluation; however, work continues and will be tested on the MUC-5 corpus in the near future to validate the approach.

*Syntactical Patterns.* This is the specific area that was not developed in time for the evaluation; unfortunately, it is also the most critical for dealing with even the simple aspects of the MUC problem. The approach we selected is intended to be compatible with the integration of more powerful text understanding components in the future, while extending the range of problems DEFT can solve by itself. It exploits DEFT's atomic pattern-recognition capabilities while separating the definition of a semantic grammar into an independent extraction phase. This phase could easily be replaced (or supplemented) with an NLU system which can optionally take advantage of the DEFT lexical pre-processing while performing deep syntactic and semantic analyses. This separation is in part intended to provide an initial test of our belief that the integration of DEFT with an NLU component creates a symbiotic association with better performance characteristics than either system by itself.

To stay within the (admittedly loosely defined) bounds of pattern matching, our approach to exploiting syntax consists of providing DEFT with a simple mechanism for expressing "meta-patterns"-- that is, patterns whose components may be the atomic patterns (and, by reference, their attributes) located by the DEFT lexicons. We decided to use a BNF specification to define a semantic grammar based on a combination of literal strings and DEFT-identified tokens.

The key issue was how to pass the results of DEFT pattern-matching to the parser. An integrated NLU component within the DEFT shell could interface directly with the DEFT Tag File through the API; the component could also interface with the frames generated by DEFT, providing a preliminary level of analysis on which to build. For our prototype, however, we chose to mark terms in the text with SGML-like tags to indicate their properties. The grammar directly references these tags, and routines were provided within the parser for assigning text strings to slots by extracting DEFT lexicon attributes (e.g., normalized values, or semantic characteristics); or collecting words intervening between two tags (of the same or different class). Additional primitives for manipulating the strings prior to slot assignment were also built into the parser infrastructure to control frame generation and the assignment of slots (including pointers to other frames) to frames. This significantly improves on the primitive scoping capability provided with the current version of DEFT.

The approach selected thus provides a vocabulary for expressing both the expected contents of documents and the rules for instantiating and linking templates. At the

same time, its intermediate product is human-readable (and, in fact, could be used as a general-purpose "tagger") and easily interpreted by other programs.

**Frame Scoping.** Fundamental changes in the DEFT frame-scoping mechanism are planned which will exploit domain knowledge as well as limited syntactic (from the meta-patterns) and semantic (from lexicon attributes) data. For MUC-5, the basic DEFT mechanism was retained, with its inherent limitations.

**Frame Linking.** A primitive frame linking capability was added to DEFT. It was based on frame scoping, however, and therefore suffered from the same limitations. The DEFT frame definition file format was extended to accommodate hierarchical relationships; any frame defined as a child of another frame had its generated frame ID automatically included as a slot value in the parent frame if its "hit location" fell within the scope of the parent frame. Of course, multiple and spurious associations are easily generated in this way. In the future, frame linking will be improved by combining syntactic and domain knowledge in a final extraction phase to resolve inter-object relations.

## RESULTS

The results of the final MUC evaluation were strongly influenced by the unavailability of the parser, which was an essential component of the DEFT approach to MUC-5. The resulting scores indicate the magnitude of the problems inherent in a simple pattern-matching strategy which is not informed with even a crude semantic grammar. It should be noted that a decision was made to focus only on a subset of templates and slots required for the preliminary run. These were the document template, tie-up-relationship, and entity. The F-measures for the final evaluation were:

P&R	2P&R	P&2R
1.15	2.64	0.74

Not surprisingly, these were the lowest scores for any system in the evaluation. A detailed analysis of the run is of little utility, however there are some points of interest seen in the walk-through sample document.

### Walkthrough Document

The identifying data (document number, source, and date) were correctly extracted.

Some simple atomic patterns were defined in a DEFT lexicon for tie-up relations. These were to be factored into a semantic grammar; as noted, the parser was not available at the time of the run. Therefore, the patterns were run as a simple search. It correctly identified the presence of a joint venture in the sample document, incorrectly instantiating two tie-up templates (one for each of two out of three references to the venture) and entering their IDs in the content slot of the document template. DEFT currently does not determine that multiple references have a common object unless the frames overlap.

A single entity was mis-identified, "Jiji Press Ltd.," which is actually the document source. This entity was incorrectly associated with the first tie-up. The foregoing explanation of the DEFT scoping mechanism makes it clear why this false association

took place. The name of the "BRIDGESTONE SPORTS CO." was correctly reconstructed from the corporate designator ("CO.") and assigned to the first tie-up. The name of the joint venture, "BRIDGESTONE SPORTS TAIWAN CO." was also constructed and associated with the second tie-up instance. No other features were correctly identified.

Among the other corporate names, the algorithm used by DEFT would not have identified "UNION PRECISION CASTING CO." but did identify "TAGA CO." However, this entity was considered out of scope of the tie-up templates and was (incorrectly) not attached to one. DEFT had no facility for recognizing "BRIDGESTONE SPORTS" nor for tracking the reference to "THE NEW COMPANY."

#### What Worked

DEFT was effective at recognizing literal strings and patterns contained in its lexicons. DEFT frequently generated correct entity names that were not in the corporate name lexicon using a set of heuristics that reasoned backwards from a designator. For example, "BRIDGESTONE SPORTS CO." was constructed. DEFT of course had little problem with the tagged items for the document template. These are precisely the kinds of elemental functions that DEFT is expected to perform well.

DEFT recognized the occurrence of some of the joint ventures, based on a very limited set of patterns that were originally defined for use in connection with a semantic grammar. This set could have been extended to produce improved recall had we known the parser would not be available. These few successes indicate that even a simple pattern-based approach can recognize concepts of this type in restricted cases.

#### What Failed

The lexicons and extraction phases that were rapidly developed for MUC-5 contained some bugs that were not observed during training; some corporate names were missed, for example, that should have been constructed. The chief failings were inadequate lexicons for identifying joint ventures and inadequate scoping. These two problems combined to suppress the instantiation of the many valid entities that DEFT found, but could not associate with a tie-up relation and therefore did not report. In general, the system was configured to reduce the anticipated overgeneration, with the expectation that tie-ups and entity relations would be identified and scoped by the semantic grammar; in the absence of the parser, undergeneration became severe.

#### System Training and Resources Expended

The effort expended on MUC-5 testing and documentation was approximately two person-weeks. System development activities undertaken independently of MUC-5 were exploited for the MUC-5 evaluation run. These included:

- Analysis: 1 person-month
- Lexicon Development and Data Definitions: 1.25 person-months
- Extraction Phases and Functions: 3 person-months

The total level of effort for all activities impacting MUC-5 was therefore roughly 5.5 person-months.

As we have noted, key system components were ultimately unavailable for the MUC-5 evaluation. Although we won't know "how we would have done" until the components are completed and our internal tests against the MUC data are repeated, it is our expectation that significant improvement will be obtained with "a little additional effort" although performance is neither expected nor required to approach that of true NLI systems, given our view of DEFT as an integration environment.

Most of the effort in creating a new DEFT application usually centers on lexicon development. For MUC-5, most lexicons were batch loaded from the data supplied via the Consortium for Lexical Research. A few lexicons for joint venture identification and scoping were developed manually. These were quite simple and their actual creation required minimal time.

Much of the time on MUC-5 was occupied with writing C-code for extraction routines, particularly for corporate names. The need to write so much code for a new application is a current weakness in DEFT which will be remedied to a degree when the parser becomes available.

Of course, a key activity was the analysis of the test corpus and development of a semantic grammar appropriate to the EJV problem. The results of this analysis were manifested in the tie-up relation lexicon and the BNF grammar for the parser. Only the former was ready in time for the evaluation. Analysis was a cyclical, iterative process; refinement continued during system training.

DEFT system training consisted of a series of runs against samples of the training corpus, utilizing the frame review tool to examine the results. Lexicons were manually refined as a result of missed objects and false hits. Early runs resulted in changes to the batch loading sequence for some of the lexicons (e.g. the corporate designators). Feedback into the grammar would also have been derived from this process, had the parser been available and time permitted. As it was, time was insufficient even for lexicon refinement; for example, a few key errors in the corporate designator lexicon resulting from a bug in the program that prepared the file provided through the Consortium for batch uploading were noted only after the final evaluation run was analyzed. This was partially responsible for some of the undergeneration.

### What We Learned

It came as no surprise that simple patterns are inadequate to extract the complex ideas expressed in the EJV documents. We view the results as validating the concept that DEFT, operating as a standalone system, is best qualified to perform on problems involving well-defined, constrained sets of text objects to be extracted, even with the addition of a "meta-pattern" or grammatical capability. DEFT should excel on such problems when throughput is a major consideration.

The selection (and on-going implementation) of a mechanism for expressing meta-patterns that is compatible with all of the goals discussed earlier is a major outcome of our MUC work, even though it was not available in time. We believe that this approach will significantly empower DEFT and broaden the range of applications for which it is a suitable tool, while increasing the flexibility with which it can be integrated with other text analysis tools. This will prove highly valuable to our



current government customers, as well as future DEFT users in the government or commercial sector.

DEFT's potential as an integration environment was underscored by the fact that we successfully ran documents through:

- A complex set of extraction phases
- With extremely large lexicons
- that are beyond the scope of anything that has been tried in existing DEFT applications. The robustness of the architecture and efficiency of the pattern searches were our major consolation in the MUC-5 evaluation. We therefore look for opportunities to combine DEFT's system engineering and search capabilities with the sophisticated analytical power of NLU-based solutions when real-world problems are encountered which are out of scope of DEFT's simple extraction mechanisms.

**COPY**

IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF MASSACHUSETTS

FILED  
JUL 31 3 56 PM '00

BRASSRING INC.

Plaintiff,

vs.

INTERACTIVE SEARCH, INC.

Defendant.

US DIST  
DIST  
MASS

**00 CV 11525 JLT**  
Civil Action No.  
JURY TRIAL DEMANDED

COMPLAINT

Plaintiff BrassRing Inc. ("BrassRing"), brings this civil action against defendant Interactive Search, Inc. ("I-Search"). BrassRing has been wrongly accused by I-Search of infringing United States Patent No. 5,999,939 and threatened with legal action. In addition, I-Search has been wrongfully interfering, and attempting to interfere, with BrassRing's advantageous and prospective business relations.

PARTIES

1. BrassRing is a Delaware corporation having a principal place of business at 77 Rumford Avenue, Suite 4, Waltham, Massachusetts 02453.
2. On information and belief, defendant I-Search is a California corporation having a principle place of business at 5959 W. Century Boulevard, Suite 1100, Los Angeles, California

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3. On information and belief, I-Search transacts and does business in the Commonwealth of Massachusetts, including selling goods and services related to the subject matter of the '939 patent.

4. I-Search has threatened BrassRing with litigation for alleged infringement of U.S. Patent No. 5,999,939, entitled "System and Method for Displaying and Entering Interactively Modified Stream Data Into a Structured Form," issued December 7, 1999, a copy of which is attached hereto as Exhibit A (the "'939 patent"). These threats were directed to BrassRing's employees in the Commonwealth of Massachusetts.

5. This is a civil action for declaratory judgment under 28 U.S.C. §2201(a) and §2202 that products and services sold by BrassRing (and its division "BrassRing Systems" which was formerly called "HireSystems") do not infringe the '939 patent and that the '939 patent is invalid and unenforceable.

6. This is also an action for interference with advantageous and prospective business relations.

7. This Court has jurisdiction under 28 U.S.C. §1338(a) and under the doctrine of pendent jurisdiction.

8. Venue in this Court is proper pursuant to 28 U.S.C. §1391(b) and (c).

#### STATEMENT OF FACTS

9. I-Search has represented that it is the owner of the '939 patent and has standing to sue for alleged infringement of this patent.

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10. I-Search has charged BrassRing with infringement of the '939 patent.

11. I-Search has stated to BrassRing that if the matter could not be resolved by BrassRing entering into a license agreement with I-Search, I-Search would turn the matter over to their patent attorneys and pursue legal remedies.

12. I-Search has told existing or potential customers of BrassRing that BrassRing infringes the '939.

13. I-Search has told existing or potential customers of BrassRing that I-Search is or will be suing BrassRing.

14. BrassRing has a reasonable apprehension that I-Search will file a lawsuit against BrassRing alleging infringement of the '939 patent.

15. An actual controversy exists between the parties with respect to the validity, enforceability and infringement of the '939 patent.

16. BrassRing's products and services do not infringe any claim of the '939 patent.

17. The '939 patent is invalid for failure to meet the conditions of patentability of 35 U.S.C. § 101, et seq.

18. When prosecuting the '939 patent, I-Search and the inventors misled the United States Patent and Trademark Office (the "PTO") and failed to disclose material information to the PTO. I-Search did so with the intent of deceiving the PTO.

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19. The '939 patent is unenforceable because I-Search committed inequitable conduct in procuring the '939 patent.

20. I-Search knows that its patent is invalid and unenforceable, but has nevertheless (i) alleged that BrassRing infringes, (ii) threatened BrassRing and (iii) used its wrongful allegation of infringement for competitive advantage with BrassRing's customers and potential customers, all in bad faith.

**COUNT I**  
**DECLARATORY JUDGMENT OF NONINFRINGEMENT**

21. The allegations of paragraphs 1-20 are realleged and incorporated by reference as if fully set forth herein.

22. This is a civil action for declaratory judgment under 28 U.S.C. §2201(a) and §2202 that products and services sold by BrassRing (and its division "BrassRing Systems") do not infringe the '939 patent.

23. I-Search has threatened BrassRing with litigation for alleged infringement of the '939 patent.

24. BrassRing's products and services do not infringe any claim of the '939 patent.

25. BrassRing is entitled to a declaratory judgment that the '939 patent has not been infringed by BrassRing.

**COUNT II**  
**DECLARATORY JUDGMENT OF INVALIDITY**

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26. The allegations of paragraphs 1-25 are realleged and incorporated by reference as if fully set forth herein.

27. This is a civil action for declaratory judgment under 28 U.S.C. §2201(a) and §2202 that the '939 patent is invalid.

28. I-Search has threatened BrassRing with litigation for alleged infringement of the '939 patent.

29. The '939 patent is invalid for failure to meet the conditions of patentability of 35 U.S.C. §§ 101, et seq

30. BrassRing is entitled to a declaration that the '939 patent is invalid.

**COUNT III**  
**DECLARATORY JUDGMENT OF UNENFORCEABILITY**

31. The allegations of paragraphs 1-30 are realleged and incorporated by reference as if fully set forth herein.

32. This is a civil action for declaratory judgment under 28 U.S.C. §2201(a) and §2202 that the '939 patent is unenforceable.

33. I-Search has threatened BrassRing with litigation for alleged infringement of the '939 patent.

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34. The '939 patent is unenforceable due to inequitable conduct committed in procuring the '939 patent.

35. BrassRing is entitled to a declaration that the '939 patent is unenforceable due to inequitable conduct.

COUNT IV  
TORTIOUS INTERFERENCE

36. The allegations of paragraphs 1-35 are realleged and incorporated by reference as if fully set forth herein.

37. BrassRing has advantageous and prospective business relationships with various independent customers for automated resume processing services and products across the United States and in the Commonwealth of Massachusetts. The independent customers are and were both actual and prospective customers of BrassRing.

38. I-Search knew of these advantageous and prospective business relationships and intentionally acted with both improper means and an improper motive for the purpose of damaging the relationships. I-Search's unjustified and intentional interference with advantageous and prospective business relationships includes telling actual or potential BrassRing customers that BrassRing infringes the '939 patent and that I-Search is taking legal action against BrassRing, when I-Search knew that the patent is invalid and unenforceable.

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39. I-Search's allegations of patent infringement to BrassRing's customers and potential customers were made in bad faith.

40. I-Search's unjustified and intentional interference with advantageous and prospective business relationships of BrassRing has proximately caused and will cause BrassRing to lose actual and prospective business and, thereby, suffer damages.

41. Such damages have been and will be realized, as I-Search could have reasonably foreseen, in the Commonwealth of Massachusetts.

EXCEPTIONAL CASE

42. This is an exceptional case warranting an award of attorneys fees to BrassRing under 35 U.S.C. §285.

DEMAND FOR JURY TRIAL

Pursuant to Rule 38, Fed.R.Civ.P., BrassRing demands a jury trial.

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WHEREFORE, BrassRing prays:


- A. For entry of judgment that BrassRing does not infringe any of the claims of the '939 patent;
- B. For entry of judgment that the '939 patent is invalid;
- C. For entry of judgment that the '939 is unenforceable because of inequitable conduct in procuring the '939 patent;
- D. For entry of judgment awarding BrassRing its attorneys' fees pursuant to 35 U.S.C. §285 and/or the general power of the court;
- E. For entry of judgment awarding BrassRing damages resulting from I-Search's interference with BrassRing's advantageous and prospective business relationships;
- F. For an injunction preventing I-Search from further interfering with BrassRing's advantageous and prospective business relationships;
- G. For entry of judgment granting BrassRing costs; and
- H. For such other and further relief as the Court may deem proper.

SECRET - 113533

-9-

Dated: July 31, 2000

BrassRing Inc.

  
Matthew B. Lowrie, BBO No. 563,414  
M. Brad Lawrence, BBO No. 641,100  
WOLF, GREENFIELD & SACKS, P.C.  
600 Atlantic Avenue  
Federal Reserve Plaza  
Boston, MA 02210  
Tel.: (617) 720-3500

0000570-110602

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**Addendum**

1. This is a civil action for declaratory judgment under 28 U.S.C. §2201(a) and §2201 that products and services sold by Brass Ring (and its division "Hire Systems") do not infringe the '939 patent and that the '939 patent is invalid and unenforceable. This is also an action for interference with advantageous and prospective business relations

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## Online Docket Sheet

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### US District Court Civil Docket

US District Court for the District of Massachusetts  
(Boston)

1:00cv11525

Brassring, Inc v. Interactive Search

This case was retrieved from the court on Wednesday, October 29, 2003

Date Filed: 07/31/2000	Class Code: CLOSED
Assigned To: Judge Joseph L Tauro	Closed: Yes
Referred To:	Statute: 28:1391
Nature of suit: Patent (830)	Jury Demand: Plaintiff
Cause: Personal Injury	Demand Amount: \$0
Lead Docket: None	
Other Docket: None	
Jurisdiction: Federal Question	

RECEIVED - 11/03/03

#### Litigants

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PLAINTIFF

#### Attorneys

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617-395-7000  
Fax: 617-395-7070  
Email: Mlowrie@ll-A.com

v.

Interactive Search  
DEFENDANT

Date #

Proceeding Text

<https://courtlink.lexisnexis.com/DocketDirect/FShowDocket.asp?Code=20344491641611...> 10/29/2003

CourtLink - Display A Docket (Free View)

Page 2 of 2

07/31/2000	1	Complaint filed. Case assigned to Judge: Tauro. Receipt #: 24217 Amount:\$ 150.00 Fee Status: pd (kl) (Entered: 08/01/2000)
07/31/2000	--	Summons issued for Interactive Search (kl) (Entered: 08/01/2000)
11/14/2000	2	Return of service executed as to Interactive Search in 1:00-cv-11525 with service on 11/3/00 filed. Answer due on 11/23/00 for Interactive Search (cmg) (Entered: 02/06/2001)
07/03/2001	--	Case closed. (cmg) (Entered: 07/03/2001)
07/18/2001	3	Notice of Bankruptcy Filing and Imposition of Automatic stay by Interactive Search in 1:00-cv-11525 by Matthew B. Lowrie in 1:00-cv-11525. FILED (c/s) (cmg) (Entered: 07/23/2001)
05/14/2002	4	Notice of voluntary dismissal by Brassring, Inc. in 1:00-cv-11525, Interactive Search in 1:00-cv-11525 as to Brassring, Inc. in 1:00-cv-11525, Interactive Search in 1:00-cv-11525, filed. (fmt) (Entered: 05/14/2002)

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2003-05-14 10:29:00

AO 440 (Rev. 10/03) Summons in Civil Action



# United States District Court

DISTRICT OF

MASSACHUSETTS

Brassring, Inc.  
V.  
Interactive Search, Inc.

## SUMMONS IN A CIVIL CASE

CASE NUMBER:

**00cv 11525 JLT**

TO: (Name and address of defendant)  
Interactive Search, Inc.  
5959 W. Century Blvd, Suite 1100  
Los Angeles, California

YOU ARE HEREBY SUMMONED and required to serve up on PLAINTIFF'S ATTORNEY (name and address)

Matthew B. Lowrie  
Wolf, Greenfield & Sacks, P.C.  
600 Atlantic Avenue  
Boston, MA 02210  
617-7203500

an answer to the complaint which is herewith served upon you, within 20 days after service of this summons upon you, exclusive of the day of service. If you fail to do so, judgment by default will be taken against you for the relief demanded in the complaint. You must also file your answer with the Clerk of this Court within a reasonable period of time after service.

DOCKETED	1
RESPONSE DUE	11-24

TONY ANASTAS

CLERK

DAVID BOLDEN

BY DEPUTY CLERK

DATE